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ABSTRACT

This document, which is intended for use by community and junior colleges throughout Mississippi, contains curriculum frameworks for the course sequences in the emergency medical technology (EMT) programs cluster. Presented in the introductory section are a description of the program and suggested course sequence. Section I lists baseline competencies for the program, and section II consists of outlines for each of the following courses in the sequence: EMT basic courses--EMT basic; EMT paramedic courses--prehospital environment; body systems; patient assessment and airway management; defibrillation skills; shock, trauma, and burn management; internship for clinical and field experience I; respiratory, cardiovascular, and medical emergencies; general pharmacology; internship/field experience II; obstetrical, gynecological, and neonatal emergencies; pediatrics; geriatrics; behavioral emergencies; and internship/field experience III; related vocational technical course--fundamentals of microcomputer applications; and related academic courses in anatomy and physiology I and II, general psychology I; general chemistry I; general chemistry lab I; general biology I and II; and microbiology. Each course outline contains some/all of the following: course name and abbreviation; course classification; course description; prerequisites; and competencies and suggested objectives. Recommended tools and equipment are listed in section III. Appended are lists of related academic topics and workplace skills for the 21st century and student competency profiles for both courses. (KC)

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Mississippi Curriculum Framework for Emergency Medical Technology

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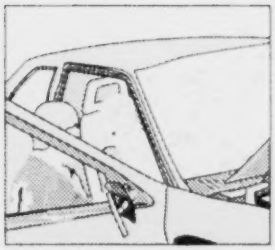

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1996

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July 30, 1996

MISSISSIPPI

CURRICULUM FRAMEWORK

FOR

EMERGENCY MEDICAL TECHNOLOGY - BASIC

(PROGRAM CIP: 51.0904)

EMERGENCY MEDICAL TECHNOLOGY - PARAMEDIC

(PROGRAM CIP: 51.0904)

POSTSECONDARY PROGRAMS

1996

July 30, 1996

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FOREWORD

In order to survive in today's global economy, businesses and industries have had to adopt new practices and procedures. Total quality management, statistical process control, participatory management, and other concepts of high performance work organizations are practices by which successful companies survive. Employers now expect their employees to be able to read, write, and communicate effectively; solve problems and make decisions; and interact with the technologies that are prevalent in today's workplace. Vocational-technical education programs must also adopt these practices in order to provide graduates who can enter and advance in the changing work world.

The curriculum framework in this document reflects these changes in the workplace and a number of other factors that impact on local vocational-technical programs. Federal and state legislation calls for articulation between high school and community college programs, integration of academic and vocational skills, and the development of sequential courses of study that provide students with the optimum educational path for achieving successful employment. National skills standards, developed by industry groups and sponsored by the U. S. Departments of Education and Labor, provide vocational educators with the expectations of employers across the United States. All of these factors are reflected in the framework found in this document.

Each postsecondary program of instruction consists of a program description and a suggested sequence of courses which focus on the development of occupational competencies. Each vocational-technical course in this sequence has been written using a common format which includes the following components:

- Course Name - A common name that will be used by all community/junior colleges in reporting students.

- Course Abbreviation - A common abbreviation that will be used by all community/junior colleges in reporting students.

- Classification - Courses may be classified as:
  - Vocational-technical core - A required vocational-technical course for all students.
  - Vocational-technical elective - An elective vocational-technical course.
  - Related academic course - An academic course which provides academic skills and knowledge directly related to the program area.
  - Academic core - An academic course which is required as part of the requirements for an Associate degree.

- Description - A short narrative which includes the major purpose(s) of the course and the recommended number of hours of lecture and laboratory activities to be conducted each week during a regular semester.

- Prerequisites - A listing of any prerequisite courses that must be taken prior to or on enrollment in the course.

- Competencies and Suggested Objectives - A listing of the competencies (major concepts and performances) and of the suggested student objectives that will enable students to demonstrate mastery of these competencies.

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75 percent of the time allocated to each course. For example, in a four semester hour course consisting of 30 hours lecture and 120 hours of laboratory activities, approximately 22 hours of lecture and 90 hours of lab should be taken by the competencies and suggested objectives identified in the course framework. The remaining 25 percent of each course should be developed at the local district level and may reflect:
  - Additional competencies and objectives within the course related to topics not found in the State framework, including activities related to specific needs of industries in the community college district.
  - Activities which develop a higher level of mastery on the existing competencies and suggested objectives.
  - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed/revised.
  - Activities which implement components of the Mississippi Tech Prep initiative, including integration of academic and vocational-technical skills and coursework, school-to-career transition activities, and articulation of secondary and postsecondary vocational-technical programs.
  - Individualized learning activities, including worksite learning activities, to better prepare individuals in the courses for their chosen occupational area.

- Sequencing of the course within a program is left to the discretion of the local district. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors.

- Programs that offer an Associate of Applied Science degree must include a minimum 15 semester credit hour academic core. Specific courses to be taken within this core are to be determined by the local district. Minimum academic core courses are as follows:
  - 3 semester credit hours — Math/Science Elective
  - 3 semester credit hours — Written Communications Elective
  - 3 semester credit hours — Oral Communications Elective
  - 3 semester credit hours — Humanities/Fine Arts Elective
  - 3 semester credit hours — Social/Behavioral Science Elective

  It is recommended that courses in the academic core be spaced out over the entire length of the program, so that students complete some academic and vocational-technical courses each semester. Each community/junior college has the discretion to select the actual courses that are required to meet this academic core requirement.

- In instances where secondary programs are directly related to community and junior college programs, competencies and suggested objectives from the high school programs are listed as Baseline Competencies. These competencies and objectives reflect skills and knowledge that are directly related to the community and junior college vocational-technical program. In adopting the curriculum framework, each community and junior college is asked to give assurances that:
  - students who can demonstrate mastery of the Baseline Competencies do not receive duplicate instruction, and
  - students who cannot demonstrate mastery of this content will be given the opportunity to do so.

- The roles of the Baseline Competencies are to:
  - Assist community/junior college personnel in developing articulation agreements with high schools, and
  - Ensure that all community and junior college courses provide a higher level of instruction than their secondary counterparts

- The Baseline Competencies may be taught as special "Introduction" courses for 3-6 semester hours of institutional credit which will not count toward Associate degree requirements. Community and junior colleges may choose to integrate the Baseline Competencies into ongoing courses in lieu of offering the "Introduction" courses or may offer the competencies through special projects or individualized instruction methods.

- Technical elective courses have been included to allow community colleges and students to customize programs to meet the needs of industries and employers in their area.

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July 30, 1996

PROGRAM DESCRIPTION

EMERGENCY MEDICAL TECHNOLOGY - BASIC

Emergency Medical Technology - Basic is an instructional program that prepares individuals to function in the prehospital environment. The EMT-Basic program provides instruction in basic life support care of sick and injured persons. This includes: airway assessment, communications, documentation, general pharmacology, hemorrhage control, ambulance operations, and splinting of adult, pediatric and infant patients; and special care of patients exposed to heat, cold, radiation, or contagious disease.

July 30, 1996

EMERGENCY MEDICAL TECHNOLOGY - BASIC

SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Emergency Medical Technology**

FIRST YEAR

4 sch EMT Basic (EMT 1114)

4 sch

* Students who lack entry level skills in math, English, science, etc. will be provided related studies.

** Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

July 30, 1996

PROGRAM DESCRIPTION

EMERGENCY MEDICAL TECHNOLOGY - PARAMEDIC

The Emergency Medical Technology - Paramedic (EMT-P) training program was developed in response to the growing need for advanced life support (ALS) providers in the prehospital setting. The EMT-P is a caring health care professional possessing special skills in advanced life support which may be utilized under a supervising physician through established protocols and direct communication via radio or telephone.

The EMT-P training program is a postsecondary program drawing its students from individuals already possessing a valid EMT-Basic license and sponsored by an established ALS provider service. Each student must be 18 years or older and possess a high school diploma or GED certificate.

This program is a three-semester program requiring a minimum of 500 clock hours of classroom instruction, 250 clock hours of clinical internship, and 150 clock hours of field internship.

Classroom instruction is comprehensive including a working knowledge of all anatomy, physiology, and pathophysiological processes as well as competency-based instruction in assessment and management skills required for treatment of life-threatening problems in the adult, pediatric, and geriatric patient. Clinical internship requires participation in care of patients in a hospital emergency department that provides medical control to ALS providers in the field and, according to availability, CCU, ICU, labor and delivery suite, operating room, psychiatric ward, pediatric ward, and geriatric ward. Field internship is done with an ambulance service and/or rescue service providing advanced life support services to the community.

Although this is an EMT-P training program, the first semester of instruction adequately covers all objectives mandated by the National Standard Training Curriculum of the Department of Transportation. Therefore the student who has successfully completed the first semester's work and is recommended by the program's medical director may apply for a seat in the National Registry's Exam as an EMT-Intermediate. If successful in this challenge, the student would then qualify to petition the State of Mississippi for an EMT-Intermediate license. The student may exit the program at this point or continue for paramedic certification.

A student successfully completing the program will receive certification from the college and be eligible to take the National Registry's Exam as an EMT-Paramedic. Those trained to the Paramedic level may receive an associate degree provided they

take the required additional academic courses. For professional accreditation purposes, these academic courses must include the following:

3 sch College Algebra
4 sch Anatomy and Physiology I
4 sch Anatomy and Physiology II
4 sch General Chemistry
3 sch General Psychology
3 sch Written Communications Elective
3 sch Oral Communications Elective
3 sch Fine Arts/Humanities Elective
3 sch Approved Elective

This training program is sanctioned by the Mississippi State Department of Health, Office of EMS, and the State Paramedic Committee. The course meets or exceeds those standards established by the National Highway Traffic Safety Administration/U.S. Department of Transportation.

EMERGENCY MEDICAL TECHNOLOGY - PARAMEDIC

SUGGESTED COURSE SEQUENCE*
(Completion of EMT-Basic Program is required for entrance)

Baseline Competencies for Emergency Medical Technology**

FIRST YEAR

3 sch	Prehospital Environment (EMT 1123)	2 sch	Respiratory Emergencies (EMT 1412)
3 sch	Body Systems (EMT 1133)	5 sch	Cardiovascular Emergencies (EMT 1425)
3 sch	Patient Assessment and Airway Management (EMT 1213)	6 sch	Medical Emergencies (EMT 1436)
2 sch	Defibrillation Skills (EMT 1222)	2 sch	General Pharmacology (EMT 1512)
5 sch	Shock, Trauma, and Burn Management (EMT 1315)	4 sch	Internship for Clinical and Field Experience II (EMT 1724)
3 sch	Internship for Clinical and Field Experience (EMT 1713)		
19 sch		19 sch	

SUMMER

2 sch	Obstetrical, Gynecological, and Neonatal Emergencies (EMT 1612)
1 sch	Pediatrics (EMT 1621)
1 sch	Geriatrics (EMT 1631)
1 sch	Behavioral Emergencies (EMT 1641)
4 sch	Internship for Clinical and Field Experience III (EMT 1734)
9 sch	

SECOND YEAR - EMT-P

3 sch	Written Communications	3 sch	Oral Communications
	Elective		Elective
3 sch	Math/Natural Science	4 sch	General Chemistry I
	Elective		(CHE 1213, CHE 1211)
4 sch	Anatomy and Physiology I	3 sch	Fine Arts/Humanities
	(BIO 1514)		Elective
3 sch	General Psychology	4 sch	Anatomy and Physiology II
	(PSY 1513)		(BIO 1524)
3 sch	Elective		
16 sch		14 sch	

* Students who lack entry level skills in math, English, science, etc. will be provided related studies.

** Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

SECTION I:

BASELINE COMPETENCIES

BASELINE COMPETENCIES FOR EMERGENCY MEDICAL TECHNOLOGY

The following competencies and suggested objectives are taken from the publication *Mississippi Curriculum Framework for Allied Health*. These competencies and objectives represent the baseline which was used to develop the community/junior college Emergency Medical Technology courses. Students enrolled in postsecondary courses should either (1) have documented mastery of these competencies, or (2) be provided with these competencies before studying the advanced competencies in the Emergency Medical Technology program.

Baseline competencies may be integrated into existing courses in the curriculum or taught as special "Introduction" courses. The "Introduction" courses may be taught for up to six semester hours of institutional credit and may be divided into two courses. If the Baseline Competencies are to be taught as "Introduction" courses, each course should be at least 3 credit hours. The following course number(s) and description should be used:

Course Name(s): Introduction to Emergency Medical Technology, Introduction to Emergency Medical Technology I, or Introduction to Technology II

Course Abbreviation(s): EMT 100(3-6), EMT 1013, EMT 1023

Classification: Vocational-Technical Core

Description: These courses contain the baseline competencies and suggested objectives from the high school Allied Health curriculum which directly relate to the community college Emergency Medical Technology program. The courses are designed for students entering the community college who have had no previous training or documented experience in the field. (3-6 semester hours based upon existing skills for each student. May be divided into 2 courses for a maximum total of 6 hours of institutional credit.)

Competencies and Suggested Objectives:

1. Review material related to course and professional organizations.
   a. Identify student and course expectations.
   b. Identify allied health professional student organizations.
   Related Academic Topics (See Appendix A): C1, C6
   Workplace Skills (See Appendix B): WP2
2. Apply communications in health care.
   a. Identify the three main factors required for the communication process.

b. Utilize effective communications skills.

Related Academic Topics (See Appendix A): C1, C6
Workplace Skills (See Appendix B): WP2, WP3

3. Develop individual career awareness in the health care industry.
   a. Describe careers in direct health care.

   Related Academic Topics (See Appendix A): C1, C6
   Workplace Skills (See Appendix B): WP2
4. Explain professional ethics and legal responsibility.
   a. Explain professional ethics and legal responsibility including negligence, malpractice, and health occupation code of conduct.
   b. Define confidentiality.
   c. Identify and explain the rules of ethics.

   Related Academic Topics (See Appendix A): C1, C4, C6
   Workplace Skills (See Appendix B): WP2, WP3
5. Utilize universal precautions.
   a. Explain importance of universal precautions in life practices and health care.
   b. Explain the state and federal government's role in universal precautions.
   c. Relate universal precautions to the transmission of infectious diseases including HIV, AIDS, HBV, and TB.
   d. Demonstrate hand-washing technique.
   e. Demonstrate donning and removing clean gloves.

   Related Academic Topics (See Appendix A): C1, C4, C6, S8
   Workplace Skills (See Appendix B): WP2
6. Recognize safety procedures and policies.
   a. Describe basic safety procedures.
   b. Describe accident prevention methods and disaster plans.
   c. Follow facility policies.

   Related Academic Topics (See Appendix A): C1, C4, C6
   Workplace Skills (See Appendix B): WP2
7. Perform basic safety procedures.
   a. Assist with basic emergency procedures to include falls, seizures, and fainting.
   b. Attain Class C certification in cardiopulmonary resuscitation.
   c. Demonstrate procedures of first aid for sudden illness and accidents.

   Related Academic Topics (See Appendix A): C1, C4, C6, S8
   Workplace Skills (See Appendix B): WP2, WP6
8. Recognize and use medical terminology.
   a. Demonstrate the use of medical references to spell medical terms correctly.
   b. Spell designated medical terms correctly.
   c. Define and divide medical terms into root words, prefixes, and suffixes.
   d. Interpret the common medical abbreviations and symbols including meanings and uses.

e. Demonstrate the use of medical terms and abbreviations in reading, speaking, interpreting, and writing simulated medical records.

Related Academic Topics (See Appendix A): C1, C4, C5, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP4

9. Recognize the structure and functions of each organ system and apply related basic skills.
   a. Interpret the basic organization of the body.
   b. Interpret the basic structures and functions of the integumentary system.
   c. Interpret the basic structures and functions of the muscular and skeletal systems.
   d. Interpret the basic structures and functions of the circulatory system.
   e. Interpret the basic structures and functions of the respiratory system.
   f. Interpret the basic structures and functions of the digestive system.
   g. Interpret the basic structures and function of the nervous system.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6, M4, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP4

10. Assess emergency health care careers by utilizing medical terminology and basic skills in exploring specific emergency health care careers.
   a. Define five terms related to emergency health care including root words, prefixes, and suffixes.
   b. Specify the role of the emergency health care team including personal qualities, job description, levels of education, and required credentials.
   c. Qualify for recertification in CPR/sudden illness according to current guidelines including infant, children, adolescent, and adult groups.

   Related Academic Topics (See Appendix A): C1, C4, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6

SECTION II:

CURRICULUM GUIDE

FOR

EMERGENCY MEDICAL TECHNOLOGY

EMERGENCY MEDICAL TECHNOLOGY – BASIC COURSES

Course Name: EMT Basic

Course Abbreviation: EMT 1114

Classification: Vocational-Technical Core

Description: This course includes responsibilities of the EMT during each phase of an ambulance run, patient assessment, emergency medical conditions, appropriate emergency care, and appropriate procedures for transporting patient. (4 sch: 1 hr. lecture, 4 hr. lab, 3 hr. clinical)

Prerequisites: None

Competencies and Suggested Objectives:

1. Acquire a professional knowledge and skills of EMS systems to include the roles and responsibilities of an EMT-Basic.
   a. Define Emergency Medical Services (EMS) systems.
   b. Differentiate the roles and responsibilities of the EMT-Basic from other prehospital care providers.
   c. Describe the roles and responsibilities related to personal safety.
   d. Discuss the roles and responsibilities of the EMT-Basic toward the safety of the crew, the patient, and bystanders.
   e. Define quality improvement and discuss the EMT-Basic's role in the process.
   f. Define medical direction and discuss the EMT-Basic's role in the process.
   g. State the specific statutes and regulations in your state regarding the EMS system.
   h. Assess areas of personal attitude and conduct of the EMT-Basic.
   i. Characterize the various methods used to access the EMS system in your community.

   Related Academic Topics (See Appendix A): C1, C2, C6, S8
   Workplace Skills (See Appendix B): WP6
2. Recognize factors associated with stress and personal safety.
   a. List possible emotional reactions that the EMT-Basic may experience when faced with trauma, illness, death, and dying.
   b. Discuss the possible reactions that a family member may exhibit when confronted with death and dying.
   c. State the steps in the EMT-Basic's approach to the family confronted with death and dying.
   d. State the possible reactions that the family of the EMT-Basic may exhibit due to their outside involvement in EMS.
   e. Recognize the signs and symptoms of critical incident stress.

f. State possible steps that the EMT-Basic may take to help reduce/alleviate stress.
g. Explain the need to determine scene safety.
h. Discuss the importance of body substance isolation.
i. Describe the steps the EMT-Basic should take for personal protection from airborne and bloodborne pathogens.
j. List the personal protective equipment necessary for each of the following situations:
   (1) Hazardous materials
   (2) Rescue operations
   (3) Violent scenes
   (4) Crime scenes
   (5) Exposure to bloodborne pathogens
   (6) Exposure to airborne pathogens
k. Explain the rationale for serving as an advocate for the use of appropriate protective equipment.
l. Given a scenario with potential infectious exposure, the EMT-Basic will use appropriate personal protective equipment. At the completion of the scenario, the EMT-Basic will properly remove and discard the protective garments.
m. Given the above scenario, the EMT-Basic will complete disinfection/cleaning and all reporting documentation.

Related Academic Topics (See Appendix A): C1, C3, C5, C6, S8
Workplace Skills (See Appendix B): WP3, WP6

3. Explain medical/legal and ethical implications that impact the functioning of a basic EMT.
   a. Define the EMT-Basic scope of practice.
   b. Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or state provisions regarding EMS application.
   c. Define consent and discuss the methods of obtaining consent.
   d. Differentiate between expressed and implied consent.
   e. Explain the role of consent of minors in providing care.
   f. Discuss the implications for the EMT-Basic in patient refusal of transport.
   g. Discuss the issues of abandonment, negligence, and battery and their implications to the EMT-Basic.
   h. State the conditions necessary for the EMT-Basic to have a duty to act.
   i. Explain the importance, necessity, and legality of patient confidentiality.
   j. Discuss the considerations of the EMT-Basic in issues of organ retrieval.
   k. Differentiate the actions that an EMT-Basic should take to assist in the preservation of a crime scene.
   l. State the conditions that require an EMT-Basic to notify local law enforcement officials.
   m. Explain the role of EMS and the EMT-Basic regarding patients with DNR orders.

n. Explain the rationale for the needs, benefits, and usage of advance directives.
o. Explain the rationale for the concept of varying degrees of DNR.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S8
Workplace Skills (See Appendix B): WP2, WP6

4. Discuss anatomy and physiology using medical terminology.
   a. Identify the following topographic terms: medial, lateral, proximal, distal, superior, inferior, anterior, posterior, midline, right and left, mid-clavicular, bilateral, and mid-axillary.
   b. Describe the anatomy and function of the following major body systems: respiratory, circulatory, musculoskeletal, nervous, and endocrine.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1
   Workplace Skills (See Appendix B): WP2, WP6
5. Demonstrate and explain the importance of obtaining the different aspects of vital signs in patient assessment.
   a. Identify the components of vital signs.
   b. Describe the methods to obtain a breathing rate.
   c. Identify the attributes that should be obtained when assessing breathing.
   d. Differentiate between shallow, labored, and noisy breathing.
   e. Describe the methods to obtain a pulse rate.
   f. Identify the information obtained when assessing a patient's pulse.
   g. Differentiate between a strong, weak, regular, and irregular pulse.
   h. Describe the methods to assess the skin color, temperature, condition, and capillary refill in infants and children.
   i. Identify the normal and abnormal skin colors.
   j. Differentiate between pale, blue, red, and yellow skin color.
   k. Identify the normal and abnormal skin temperature.
   l. Differentiate between hot, cool, and cold skin temperature.
   m. Identify normal and abnormal skin conditions.
   n. Identify normal and abnormal capillary refill in infants and children.
   o. Describe the methods to assess the pupils.
   p. Identify normal and abnormal pupil size.
   q. Differentiate between dilated (big) and constricted (small) pupil size.
   r. Differentiate between reactive and non-reactive pupils and equal and unequal pupils.
   s. Describe the methods to assess blood pressure.
   t. Define systolic pressure.
   u. Define diastolic pressure.
   v Explain the difference between auscultation and palpation for obtaining a blood pressure.
   w. Identify the components of the SAMPLE history.
   x. Differentiate between a sign and a symptom.
   y. State the importance of accurately reporting and recording the baseline vital signs.

z. Discuss the need to search for additional medical identification.
aa. Explain the value of performing the baseline vital signs.
bb. Recognize and respond to the feelings patients experience during assessment.
cc. Defend the need for obtaining and recording an accurate set of vital signs.
dd. Explain the rationale of recording additional sets of vital signs.
ee. Explain the importance of obtaining a SAMPLE history.
ff. Demonstrate the skills involved in assessment of breathing.
gg. Demonstrate the skills associated with obtaining a pulse.
hh. Demonstrate the skills associated with the skin color, temperature, condition, and capillary refill in infants and children.
ii. Demonstrate the skills associated with assessing the pupils.
jj. Demonstrate the skills associated with obtaining blood pressure.
kk. Demonstrate the skills that should be used to obtain information from the patient, family, or bystanders at the scene.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S8
Workplace Skills (See Appendix B): WP2, WP5, WP6

6. Discuss and demonstrate the appropriate methods and equipment utilized for lifting and moving patients allowing for safety of the patient and self.
   a. Define body mechanics.
   b. Discuss the guidelines and safety precautions that need to be followed when lifting a patient.
   c. Describe the safe lifting of cots and stretchers.
   d. Describe the guidelines and safety precautions for carrying patients and/or equipment.
   e. Discuss one-handed carrying techniques.
   f. Describe correct and safe carrying procedures on stairs.
   g. State the guidelines for reaching and their application.
   h. Describe correct reaching for log rolls.
   i. State the guidelines for pushing and pulling.
   j. Discuss the general considerations of moving patients.
   k. State three situations that may require the use of an emergency move.
   l. Identify the following patient carrying devices:
      (1) Wheeled ambulance stretcher
      (2) Stair chair
      (3) Scoop stretcher
      (4) Long spine board
      (5) Basket stretcher
      (6) Flexible stretcher
   m. Explain the rationale for properly lifting and moving patients.
   n. Working with a partner, prepare each of the following devices for use, transfer a patient to the device, properly position the patient on the device, move the device to the ambulance and load the patient into the ambulance:

(1) Wheeled ambulance stretcher
(2) Portable ambulance stretcher
(3) Stair chair
(4) Scoop stretcher
(5) Long spine board
(6) Basket stretcher
(7) Flexible stretcher

o. Working with a partner, the EMT-Basic will demonstrate techniques for the transfer of a patient from an ambulance stretcher to a hospital stretcher.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

7. Discuss the respiratory system and appropriate airway and ventilatory management.
   a. Name and label the major structures of the respiratory system on a diagram.
   b. List the signs of adequate breathing.
   c. List the signs of inadequate breathing.
   d. Describe the steps in performing the head-tilt chin lift.
   e. Relate mechanism of injury to opening the airway.
   f. Describe the steps in performing the jaw thrust.
   g. State the importance of having a suction unit ready for immediate use when providing emergency care.
   h. Describe the techniques of suctioning.
   i. Describe how to artificially ventilate a patient with a pocket mask.
   j. Describe the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask while using the jaw thrust.
   k. List the parts of a bag-valve-mask system.
   l. Describe the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask for one and two rescuers.
   m. Describe the signs of adequate artificial ventilation using the bag-valve-mask.
   n. Describe the signs of inadequate artificial ventilation using the bag-valve-mask.
   o. Describe the steps in artificially ventilating a patient with a flow-restricted, oxygen-powered ventilation device.
   p. List the steps in performing the actions taken when providing mouth-to-mouth and mouth-to-stoma artificial ventilation.
   q. Describe how to measure and insert an oropharyngeal (oral) airway.
   r. Describe how to measure and insert a nasopharyngeal (nasal) airway.
   s. Define the components of an oxygen delivery system.
   t. Identify a nonrebreather face mask and state the oxygen flow requirements needed for its use.

u. Describe the indications for using a nasal cannula versus a nonrebreather face mask.
v. Identify a nasal cannula and state the flow requirements needed for its use.
w. Explain the rationale for basic life support, artificial ventilation, and airway protective skills taking priority over most other basic life support skills.
x. Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.
y. Demonstrate the steps in performing the head-tilt chin lift.
z. Demonstrate the steps in performing the jaw thrust.
aa. Demonstrate the techniques of suctioning.
bb. Demonstrate the steps in providing mouth-to-mouth artificial ventilation with body substance isolation (barrier shields).
cc. Demonstrate how to use a pocket mask to artificially ventilate a patient.
dd. Demonstrate the assembly of a bag-valve-mask unit.
ee. Demonstrate the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask for one and two rescuers.
ff. Demonstrate the steps in performing the skill of artificially ventilating a patient with a bag-valve-mask while using the jaw thrust.
gg. Demonstrate artificial ventilation of a patient with a flow-restricted, oxygen-powered ventilation device.
hh. Demonstrate how to artificially ventilate a patient with a stoma.
ii. Demonstrate how to insert an oropharyngeal (oral) airway.
jj. Demonstrate how to insert a nasopharyngeal (nasal) airway.
kk. Demonstrate the correct operation of oxygen tanks and regulators.
ll. Demonstrate the use of a nonrebreather face mask and state the oxygen flow requirements needed for its use.
mm. Demonstrate the use of a nasal cannula and state the flow requirements needed for its use.
nn. Demonstrate how to artificially ventilate the infant and child patient.
oo. Demonstrate oxygen administration for the infant and child patient.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, C6, S1, S5, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

8. Explain the rationale for crew members to evaluate scene safety prior to entering the scene.
   a. Recognize hazards/potential hazards.
   b. Describe common hazards found at the scene of a trauma and a medical patient.
   c. Determine if the scene is safe to enter.
   d. Discuss common mechanisms of injury/nature of illness.
   e. Discuss the reason for identifying the total number of patients at the scene.

f. Explain the reason for identifying the need for additional help or assistance.
g. Explain the rationale for crew members to evaluate scene safety prior to entering.
h. Serve as a model for others explaining how patient situations affect your evaluation of mechanism of injury or illness.
i. Observe various scenarios and identify potential hazards.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

9. Explain the importance of learning a general impression of the patient.
   a. Summarize the reasons for forming a general impression of the patient.
   b. Discuss methods of assessing altered mental status.
   c. Differentiate between assessing the altered mental status in the adult, child, and infant patient.
   d. Discuss methods of assessing the airway in the adult, child, and infant patient.
   e. State reasons for management of the cervical spine once the patient has been determined to be a trauma patient.
   f. Describe methods used for assessing if a patient is breathing.
   g. State what care should be provided to the adult, child, and infant patient with adequate breathing.
   h. State what care should be provided to the adult, child, and infant patient without adequate breathing.
   i. Differentiate between a patient with adequate and inadequate breathing.
   j. Distinguish between methods of assessing breathing in the adult, child, and infant patient.
   k. Compare the methods of providing airway care to the adult, child, and infant patient.
   l. Describe the methods used to obtain a pulse.
   m. Differentiate between obtaining a pulse in an adult, child, and infant patient.
   n. Discuss the need to assessing the patient for external bleeding.
   o. Describe normal and abnormal findings when assessing skin color.
   p. Describe normal and abnormal findings when assessing skin temperature.
   q. Describe normal and abnormal findings when assessing skin condition.
   r. Describe normal and abnormal findings when assessing skin capillary refill in the infant and child patient.
   s. Explain the reason for prioritizing a patient for care and transport.
   t. Explain the value of performing an initial assessment.
   u. Demonstrate the techniques for assessing mental status.
   v. Demonstrate the techniques for assessing the airway.
   w. Demonstrate the techniques for assessing if the patient is breathing.
   x. Demonstrate the techniques for assessing if the patient has a pulse.

y. Demonstrate the techniques for assessing the patient for external bleeding.
z. Demonstrate the techniques for assessing the patient's skin color, temperature, condition, and capillary refill (infants and children only).
aa. Demonstrate ability to prioritize patients.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

10. Demonstrate and explain the different aspects of a rapid trauma assessment in order to provide patient care.
    a. Discuss the reasons for reconsideration concerning the mechanism of injury.
    b. State the reasons for performing a rapid trauma assessment.
    c. Recite examples and explain why patients should receive a rapid trauma assessment.
    d. Describe the areas included in the rapid trauma assessment and discuss what should be evaluated.
    e. Differentiate when the rapid assessment may be altered in order to provide patient care.
    f. Discuss the reason for performing a focused history and physical exam.
    g. Recognize and respect the feelings that patients might experience during assessment.
    h. Demonstrate the rapid trauma assessment that should be used to assess a patient based on mechanism of injury.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1, S8
    Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

11. Identify and demonstrate the different aspects of patient assessment with varying degrees of patient's responsiveness.
    a. Describe the unique needs for assessing an individual with a specific chief complaint with no known prior history.
    b. Differentiate between the history and physical exam that are performed for responsive patients with no known prior history and responsive patients with a known prior history.
    c. Describe the needs for assessing an individual who is unresponsive.
    d. Differentiate between the assessment that is performed for a patient who is unresponsive or has an altered mental status and other medical patients requiring assessment.
    e. Attend to the feelings that patients might be experiencing.
    f. Demonstrate the patient assessment skills that should be used to assist a patient who is responsive with no known history.
    g. Demonstrate the patient assessment skills that should be used to assist a patient who is unresponsive or has an altered mental status.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1, S8
    Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

12. Determine the components of the detailed physical exam and the care to be provided to the patient during assessment.
    a. Discuss the components of the detailed physical exam.
    b. State the areas of the body that are evaluated during the detailed physical exam.
    c. Explain what additional care should be provided while performing the detailed physical exam.
    d. Distinguish between the detailed physical exam that is performed on a trauma patient and that of the medical patient.
    e. Explain the rationale for the feelings that these patients might be experiencing.
    f. Demonstrate the skills involved in performing the detailed physical exam.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1, S6, S8
    Workplace Skills (See Appendix B): WP2, WP3, WP6
13. Explain the components and importance of the ongoing assessment.
    a. Discuss the reasons for repeating the initial assessment as part of the ongoing assessment.
    b. Describe the components of the ongoing assessment.
    c. Describe trending of assessment components.
    d. Explain the value of performing an ongoing assessment.
    e. Recognize and respect the feelings that patients might experience during assessment.
    f. Explain the value of trending assessment components to other health professionals who assume care of the patient.
    g. Demonstrate the skills involved in performing the ongoing assessment.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1, S6, S8
    Workplace Skills (See Appendix B): WP2, WP3, WP6
14. Demonstrate the proper procedure and skills for effective radio communications.
    a. List the proper methods of initiating and terminating a radio call.
    b. State the proper sequence for delivery of patient information.
    c. Explain the importance of effective communication of patient information in the verbal report.
    d. Identify the essential components of the verbal report.
    e. Describe the attributes for increasing effectiveness and efficiency of verbal communications.
    f. State legal aspects to consider in verbal communication.
    g. Discuss the communication skills that should be used to interact with the patient.
    h. Discuss the communication skills that should be used to interact with the family, bystanders, and individuals from other agencies while providing patient care and the difference between skills used to interact with the patient and those used to interact with others.

i. List the correct radio procedures in the following phases of a typical call:
   (1) To the scene
   (2) At the scene
   (3) To the facility
   (4) At the facility
   (5) To the station
   (6) At the station

j. Explain the rationale for providing efficient and effective radio communications and patient reports.

k. Perform a simulated, organized, concise radio transmission.

l. Perform an organized, concise patient report that would be given to the staff at a receiving facility.

m. Perform a brief, organized report that would be given to an ALS provider arriving at an incident scene at which the EMT-Basic was already providing care.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6
Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

15. Develop appropriate documentation which adheres to state and local requirements.

a. Explain the components of the written report and list the information that should be included in the written report.

b. Identify the various sections of the written report.

c. Describe what information is required in each section of the prehospital care report and how it should be entered.

d. Define the special considerations concerning patient refusal.

e. Describe the legal implications associated with the written report.

f. Discuss all state and/or local record and reporting requirements.

g. Explain the rationale for patient care documentation.

h. Explain the rationale for the EMS system gathering data.

i. Explain the rationale for using medical terminology correctly.

j. Explain the rationale for using an accurate and synchronous clock so that information can be used in trending.

k. Complete a prehospital care report.

Related Academic Topics (See Appendix A): C1, C3, C4, C6, S1, S8
Workplace Skills (See Appendix B): WP6

16. Discuss pharmacology relative to the EMT-Basic.

a. Identify which medications will be carried on the unit.

b. State the medications carried on the unit by the generic name.

c. Identify the medications with which the EMT-Basic may assist the patient with administering.

d. State the medications the EMT-Basic can assist the patient with by the generic name.

e. Discuss the forms in which the medications may be found.

f. Explain the rationale for the administration of medications.

g. Demonstrate general steps for assisting patient with self-administration of medications.
h. Read the labels and inspect each type of medication.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, S5
Workplace Skills (See Appendix B): WP3, WP6

17. Describe the respiratory system and procedures for airway/ventilation management.
    a. List the structure and function of the respiratory system.
    b. State the signs and symptoms of a patient with breathing difficulty.
    c. Describe the emergency medical care of the patient with breathing difficulty.
    d. Recognize the need for medical direction to assist in the emergency medical care of the patient with breathing difficulty.
    e. Describe the emergency medical care of the patient with breathing distress.
    f. Establish the relationship between airway management and the patient with breathing difficulty.
    g. List signs of adequate air exchange.
    h. State the generic name, medication forms, dose, administration, action, indications, and contraindications for the prescribed inhaler.
    i. Distinguish between the emergency medical care of the infant, child, and adult patient with breathing difficulty.
    j. Differentiate between upper airway obstruction and lower airway disease in the infant and child patient.
    k. Defend EMT-Basic treatment regimens for various respiratory emergencies.
    l. Explain the rationale for administering an inhaler.
    m. Demonstrate the emergency medical care for breathing difficulty.
    n. Perform the steps in facilitating the use of an inhaler.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1, S5, S8
    Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

18. Demonstrate cardiac interventions and discuss the management of the cardiac patient.
    a. Describe the structure and function of the cardiovascular system.
    b. Describe the emergency medical care of the patient experiencing chest pain/discomfort.
    c. List the indications for automated external defibrillation.
    d. List the contraindications for automated external defibrillation.
    e. Define the role of EMT-Basic in the emergency cardiac care system.
    f. Explain the impact of age and weight on defibrillation.
    g. Discuss the position of comfort for patients with various cardiac emergencies.

h. Establish the relationship between airway management and the patient with cardiovascular compromise.
i. Predict the relationship between the patient experiencing cardiovascular compromise and basic life support.
j. Discuss the fundamentals of early defibrillation.
k. Explain the rationale for early defibrillation.
l. Explain that not all chest pain patients result in cardiac arrest and do not need to be attached to an automated external defibrillator.
m. Explain the importance of prehospital Advanced Cardiac Life Support (ACLS) intervention if it is available.
n. Explain the importance of urgent transport to a facility with ACLS if it is not available in the prehospital setting.
o. Discuss the various types of automated external defibrillators.
p. Differentiate between the fully automated and the semiautomated defibrillator.
q. Discuss the procedures that must be taken into consideration for standard operations of the various types of automated external defibrillators.
r. State the reasons for assuring that the patient is pulseless and apneic when using the automated external defibrillator.
s. Discuss the circumstances which may result in inappropriate shocks.
t. Explain the considerations for interruption of CPR when using the automated external defibrillator.
u. Discuss the advantages and disadvantages of automated external defibrillators.
v. Summarize the speed of operation of automated external defibrillation.
w. Discuss the use of remote defibrillation through adhesive pads.
x. Discuss the special considerations for rhythm monitoring.
y. List the steps in the operation of the automated external defibrillator.
z. Discuss the standard of care that should be used to provide care to a patient with persistent ventricular fibrillation and no available ACLS.
aa. Discuss the standard of care that should be used to provide care to a patient with recurrent ventricular fibrillation and no available ACLS.
bb. Differentiate between the single rescuer and multi-rescuer care with an automated external defibrillator.
cc. Explain the reason for pulses not being checked between shocks with an automated external defibrillator.
dd. Discuss the importance of coordinating ACLS trained providers with personnel using automated external defibrillators.
ee. Discuss the importance of post-resuscitation care.
ff. List the components of post-resuscitation care.
gg. Explain the importance of frequent practice with the automated external defibrillator.

hh. Discuss the need to complete the Automated Defibrillator: Operator's Shift Checklist.
ii. Discuss the role of the American Heart Association (AHA) in the use of automated external defibrillation.
jj. Explain the role medical direction plays in the use of automated external defibrillation.
kk. State the reasons that a case review should be completed following the use of the automated external defibrillator.
ll. Discuss the components that should be included in a case review.
mm. Discuss the goal of quality improvement in automated external defibrillation.
nn. Recognize the need for medical direction of protocols to assist in the emergency medical care of the patient with chest pain.
oo. List the indications for the use of nitroglycerin.
pp. State the contraindications and side effects for the use of nitroglycerin.
qq. Define the function of all controls on an automated external defibrillator, and describe event documentation and battery defibrillator maintenance.
rr. Defend the reasons for obtaining initial training in automated external defibrillation and the importance of continuing education.
ss. Defend the reason for maintenance of automated external defibrillators.
tt. Explain the rationale for administering nitroglycerin to a patient with chest pain or discomfort.
uu. Demonstrate the assessment and emergency medical care of a patient experiencing chest pain/discomfort.
vv. Demonstrate the application and operation of the automated external defibrillator.
ww. Demonstrate the maintenance of an automated external defibrillator.
xx. Demonstrate the assessment and documentation of patient response to the automated external defibrillator.
yy. Demonstrate the skills necessary to complete the Automated Defibrillator: Operator's Shift Checklist.
zz. Perform the steps in facilitating the use of nitroglycerin for chest pain or discomfort.
aaa. Demonstrate the assessment and documentation of patient response to nitroglycerin.
bbb. Practice completing a prehospital care report for patients with cardiac emergencies.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S1, S5, S8

Workplace Skills (See Appendix B): WP2, WP3, WP6

19. Explain and perform prehospital Basic interventions for a patient with a diabetic emergency.
    a. Identify the patient taking diabetic medications with altered mental status and the implications of a diabetes history.

b. State the steps in the emergency medical care of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
c. Establish the relationship between airway management and the patient with altered mental status.
d. State the generic and trade names, medication forms, dose, administration, action, and contraindications for oral glucose.
e. Evaluate the need for medical direction in the emergency medical care of the diabetic patient.
f. Explain the rationale for administering oral glucose.
g. Demonstrate the steps in the emergency medical care for the patient taking diabetic medicine with an altered mental status and a history of diabetes.
h. Demonstrate the steps in the administration of oral glucose.
i. Demonstrate the assessment and documentation of patient response to oral glucose.
j. Demonstrate how to complete a prehospital care report for patients with diabetic emergencies.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, M4, S5, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

20. Recognize and manage allergic reactions.
a. Recognize the patient experiencing an allergic reaction.
b. Describe the emergency medical care of the patient with an allergic reaction.
c. Establish the relationship between the patient with an allergic reaction and airway management.
d. Describe the mechanisms of allergic response and the implications for airway management.
e. State the generic and trade names, medication forms, dose, administration, action, and contraindications for the epinephrine auto-injector.
f. Evaluate the need for medical direction in the emergency medical care of the patient with an allergic reaction.
g. Differentiate between the general category of those patients having an allergic reaction and those patients having an allergic reaction and requiring immediate medical care, including immediate use of epinephrine auto-injector.
h. Explain the rationale for administering epinephrine using an auto-injector.
i. Demonstrate the emergency medical care of the patient experiencing an allergic reaction.
j. Demonstrate the use of epinephrine auto-injector.
k. Demonstrate the assessment and documentation of patient response to an epinephrine injection.
l. Demonstrate proper disposal of equipment.

m. Demonstrate completing a prehospital care report for patients with allergic emergencies.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, M4, S5, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

21. Define poisons and discuss appropriate intervention methods for poisoning.
    a. List various ways that poisons enter the body.
    b. List signs/symptoms associated with poisoning.
    c. Discuss the emergency medical care for the patient with possible overdose.
    d. Describe the steps in the emergency medical care for the patient with suspected poisoning.
    e. Establish the relationship between the patient suffering from poisoning or overdose and airway management.
    f. State the generic and trade names, indications, contraindications, medication form, dose, administration, actions, side effects, and reassessment strategies for activated charcoal.
    g. Recognize the need for medical direction in caring for the patient with poisoning or overdose.
    h. Explain the rationale for administering activated charcoal.
    i. Explain the rationale for contacting medical direction early in the prehospital management of the poisoning or overdose patient.
    j. Demonstrate the steps in the emergency medical care for the patient with possible overdose.
    k. Demonstrate the steps in the emergency medical care for that patient with suspected poisoning.
    l. Perform the necessary steps required to provide a patient with activated charcoal.
    m. Demonstrate the assessment and documentation of patient response.
    n. Demonstrate proper disposal of the equipment for administration of activated charcoal.
    o. Demonstrate completing a prehospital care report for patients with a poisoning/overdose emergency.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6

22. Identify environmental conditions that pose a hazard to the body and discuss appropriate management techniques.
    a. Describe the various ways that the body loses heat.
    b. List the signs and symptoms of exposure to cold.
    c. Explain the steps in providing emergency medical care to a patient exposed to cold.
    d. List the signs and symptoms of exposure to heat.
    e. Explain the steps in providing emergency care to a patient exposed to heat.

f. Recognize the signs and symptoms of water-related emergencies.
g. Describe the complications of near drowning.
h. Discuss the emergency medical care of bites and stings.
i. Demonstrate the assessment and emergency medical care of a patient with exposure to cold.
j. Demonstrate the assessment and emergency medical care of a patient with exposure to heat.
k. Demonstrate the assessment and emergency medical care of a near drowning patient.
l. Demonstrate completing a prehospital care report for patients with environmental emergencies.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, S1
Workplace Skills (See Appendix B): WP6

23. Appraise behaviors relative to the potential for harm and explain appropriate intervention.
    a. Define behavioral emergencies.
    b. Discuss the general factors that may cause an alteration in patient's behavior.
    c. State the various reasons for psychological crises.
    d. Discuss the characteristics of an individual's behavior which suggests that the patient is at risk for suicide.
    e. Discuss special medical/legal considerations for managing behavioral emergencies.
    f. Discuss the special considerations for assessing a patient with behavioral problems.
    g. Discuss the general principles of an individual's behavior which suggests that he/she is at risk for violence.
    h. Discuss methods to calm behavioral emergency patients.
    i. Explain the rationale for learning how to modify behavior toward the patient with a behavioral emergency.
    j. Demonstrate the assessment and emergency medical care of the patient experiencing a behavioral emergency.
    k. Demonstrate various techniques to safely restrain a patient with a behavioral problem.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S8
    Workplace Skills (See Appendix B): WP6

24. Recognize and manage an obstetrical emergency to include care for the neonate.
    a. Identify the following structures: uterus, vagina, fetus, placenta, umbilical cord, amniotic sac, perineum.
    b. Identify and explain the use of the contents of an obstetrics kit.
    c. Identify predelivery emergencies.
    d. State indications of an imminent delivery.

e. Differentiate the emergency medical care provided to a patient with predelivery emergencies from a normal delivery.
f. State the steps in the predelivery preparation of the mother.
g. Establish the relationship between body substance isolation and childbirth.
h. State the steps to assist in the delivery.
i. Describe care of the baby as the head appears.
j. Describe how and when to cut the umbilical cord.
k. Discuss the steps in the delivery of the placenta.
l. List the steps in the emergency medical care of the mother post-delivery.
m. Summarize neonatal resuscitation procedures.
n. Describe the procedures for the following abnormal deliveries: breech birth, prolapsed cord, limb presentation.
o. Differentiate the special considerations for multiple births.
p. Describe special considerations of meconium.
q. Describe special considerations of a premature baby.
r. Discuss the emergency medical care of a patient with a gynecological emergency.
s. Explain the rationale for understanding the implications of treating two patients (mother and baby).
t. Demonstrate the steps to assist in the normal cephalic delivery.
u. Demonstrate necessary care procedures of the fetus as the head appears.
v. Demonstrate infant neonatal procedures.
w. Demonstrate post-delivery care of infant.
x. Demonstrate how and when to cut the umbilical cord.
y. Attend to the steps in the delivery of the placenta.
z. Demonstrate the post-delivery care of the mother.
aa. Demonstrate the procedures for the following abnormal deliveries: vaginal bleeding, breech birth, prolapsed cord, limb presentation.
bb. Demonstrate the steps in the emergency medical care of the mother with excessive bleeding.
cc. Demonstrate completing a prehospital care report for patients with obstetrical/gynecological emergencies.

Related Academic Topics (See Appendix A): C1, C2, C3, C5
Workplace Skills (See Appendix B): WP3, WP6

25. Describe the pathophysiology of hypoperfusion and demonstrate emergency interventions.
    a. List the structure and function of the circulatory system.
    b. Differentiate between arterial, venous, and capillary bleeding.
    c. State methods of emergency medical care of external bleeding.
    d. Establish the relationship between body substance isolation and bleeding.
    e. Establish the relationship between airway management and the trauma patient.

f. Establish the relationship between mechanism of injury and internal bleeding.
g. List the signs of internal bleeding.
h. List the steps in the emergency medical care of the patient with signs and symptoms of internal bleeding.
i. List signs and symptoms of shock (hypoperfusion).
j. List the steps in the emergency medical care of the patient with signs and symptoms of shock (hypoperfusion).
k. Explain the sense of urgency to transport patients that are bleeding and show signs of shock (hypoperfusion).
l. Demonstrate direct pressure as a method of emergency medical care of external bleeding.
m. Demonstrate the use of diffuse pressure as a method of emergency medical care of external bleeding.
n. Demonstrate the use of pressure points and tourniquets as a method of emergency medical care of external bleeding.
o. Demonstrate the care of the patient exhibiting signs and symptoms of internal bleeding.
p. Demonstrate the care of the patient exhibiting signs and symptoms of shock (hypoperfusion).
q. Demonstrate completing a prehospital care report for the patient with bleeding and/or shock (hypoperfusion).

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S1, S5, S8

Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

26. Explain soft tissue injuries and perform the techniques used in the management of various soft tissue injuries.
    a. State the major functions of the skin.
    b. List the layers of the skin.
    c. Establish the relationship between body substance isolation (BSI) and soft tissue injuries.
    d. List the types of closed soft tissue injuries.
    e. Describe the emergency medical care of the patient with a closed soft tissue injury.
    f. State the types of open soft tissue injuries.
    g. Describe the emergency medical care of the patient with an open soft tissue injury.
    h. Discuss the emergency medical care considerations for a patient with a penetrating chest injury.
    i. State the emergency medical care considerations for a patient with an open wound to the abdomen.
    j. Differentiate the care of an open wound to the chest from an open wound to the abdomen.
    k. List the classifications of burns.

l. Define superficial burns.
m. List the characteristics of a superficial burn.
n. Define partial thickness burn.
o. List the characteristics of a partial thickness burn.
p. Define full thickness burn.
q. List the characteristics of a full thickness burn.
r. Describe the emergency medical care of the patient with a superficial burn.
s. Describe the emergency medical care of the patient with a partial thickness burn.
t. Describe the emergency medical care of the patient with a full thickness burn.
u. List the functions of dressing and bandaging.
v. Describe the purpose of a bandage.
w. Describe the steps in applying a pressure dressing.
x. Establish the relationship between airway management and the patient with chest injury, burns, blunt and penetrating injuries.
y. Describe the effects of improperly applied dressings, splints, and tourniquets.
z. Describe the emergency medical care of a patient with an impaled object.
aa. Describe the emergency medical care of a patient with an amputation.
bb. Describe the emergency medical care for a chemical burn.
cc. Describe the emergency medical care for an electrical burn.
dd. Demonstrate the steps in the emergency medical care of closed soft tissue injuries.
ee. Demonstrate the steps in the emergency medical care of a patient with an open chest wound.
ff. Demonstrate the steps in the emergency medical care of a patient with open abdominal wounds.
gg. Demonstrate the steps in the emergency medical care of a patient with an impaled object.
hh. Demonstrate the steps in the emergency medical care of a patient with an amputation.
ii. Demonstrate the steps in the emergency medical care of an amputated part.
jj. Demonstrate the steps in the emergency medical care of a patient with superficial burns.
kk. Demonstrate the steps in the emergency medical care of a patient with partial thickness burns.
ll. Demonstrate the steps in the emergency medical care of a patient with full thickness burns.
mm. Demonstrate the steps in the emergency medical care of a patient with a chemical burn.

nn. Demonstrate completing a prehospital care report for patients with soft tissue injuries.

Related Academic Topics (See Appendix A): C1, C2, C3, C5, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

27. Integrate the anatomy and physiology of the musculoskeletal system with the mechanisms of immobilization of the painful, swollen, deformed extremity.
    a. Describe the function of the muscular system.
    b. Describe the function of the skeletal system.
    c. List the major bones or bone groupings of the spinal column, the thorax, the upper extremities, and the lower extremities.
    d. Differentiate between an open and a closed painful, swollen, deformed extremity.
    e. State the reasons for splinting.
    f. List the general rules of splinting.
    g. List the complications of splinting.
    h. List the emergency medical care for a patient with a painful, swollen, deformed extremity.
    i. Explain the rationale for splinting at the scene versus load and go.
    j. Explain the rationale for immobilization of the painful, swollen, deformed extremity.
    k. Demonstrate the emergency medical care of a patient with a painful, swollen, deformed extremity.
    l. Demonstrate completing a prehospital care report for patients with musculoskeletal injuries.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S1, S6, S8
    Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

28. Distinguish the anatomy and physiology of the nervous system, explain the pathophysiology of traumatic injuries, and demonstrate the prehospital skills necessary for the neurological injured patient.
    a. State the components of the nervous system.
    b. List the functions of the central nervous system.
    c. Define the structure of the skeletal system as it relates to the nervous system.
    d. Relate mechanism of injury to potential injuries of the head and spine.
    e. Describe the implications of not properly caring for potential spine injuries.
    f. State the signs and symptoms of a potential spine injury.
    g. Describe the method of determining if a responsive patient may have a spine injury.
    h. Relate the airway emergency medical care techniques to the patient with a suspected spine injury.
    i. Describe how to stabilize the cervical spine.

j. Discuss indications for sizing and using a cervical spine immobilization device.
k. Establish the relationship between airway management and the patient with head and spine injuries.
l. Describe a method for sizing a cervical spine immobilization device.
m. Describe how to log roll a patient with a suspected spine injury.
n. Describe how to secure a patient to a long spine board.
o. List instances when a short spine board should be used.
p. Describe how to immobilize a patient using a short spine board.
q. Describe the indications for the use of rapid extrication.
r. List steps in performing rapid extrication.
s. State the circumstances when a helmet should be left on a patient.
t. Discuss the circumstances when a helmet should be removed.
u. Identify different types of helmets.
v. Describe the unique characteristics of sports helmets.
w. Explain the preferred methods to remove a helmet.
x. Discuss alternative methods for removal of a helmet.
y. Describe how the patient's head is stabilized to remove the helmet.
z. Differentiate how the head is stabilized with a helmet compared to without a helmet.
aa. Explain the rationale for immobilization of the entire spine when a cervical spine injury is suspected.
bb. Explain the rationale for utilizing immobilization methods apart from the straps on the cots.
cc. Explain the rationale for utilizing a short spine immobilization device when moving a patient from the sitting to the supine position.
dd. Explain the rationale for utilizing rapid extraction approaches only when they will make the difference between life and death.
ee. Defend the reasons for leaving a helmet in place for transport of a patient.
ff. Defend the reasons for removal of a helmet prior to transport of a patient.
gg. Demonstrate opening the airway in a patient with suspected spinal cord injury.
hh. Demonstrate evaluating a responsive patient with a suspected spinal cord injury.
ii. Demonstrate stabilization of the cervical spine.
jj. Demonstrate the four person log roll for a patient with suspected spinal cord injury.
kk. Demonstrate how to log roll a patient with a suspected spinal injury using two people.
ll. Demonstrate securing a patient to a long spine board.
mm. Demonstrate using the short board immobilization technique.
nn. Demonstrate procedure for rapid extrication.

oo. Demonstrate preferred methods for stabilization of a helmet.
pp. Demonstrate helmet removal techniques.
qq. Demonstrate alternative methods for stabilization of a helmet.
rr. Demonstrate completing a prehospital care report for patients with head and spinal injuries.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S1, S6, S8

Workplace Skills (See Appendix B): WP2, WP3, WP6

29. Contrast the care required for pediatric patients versus adult patients and perform the skills necessary for prehospital pediatric intervention.
    a. Identify the developmental considerations for the following age groups: infants, toddlers, pre-school, school age, and adolescent.
    b. Describe differences in anatomy and physiology of the infant, child, and adult patient.
    c. Differentiate the response of the ill or injured infant or child (age specific) from that of an adult.
    d. Indicate various causes of respiratory emergencies.
    e. Differentiate between respiratory distress and respiratory failure.
    f. List the steps in the management of foreign body airway obstruction.
    g. Summarize emergency medical care strategies for respiratory distress and respiratory failure.
    h. Identify the signs and symptoms of shock (hypoperfusion) in the infant and child patient.
    i. Describe the methods of determining end organ perfusion in the infant and child patient.
    j. State the usual cause of cardiac arrest in infants and children versus adults.
    k. List the common causes of seizures in the infant and child patient.
    l. Describe the management of seizures in the infant and child patient.
    m. Differentiate between the injury patterns in adults, infants, and children.
    n. Discuss the field management of the infant and child trauma patient.
    o. Summarize the indicators of possible child abuse and neglect.
    p. Describe the medical legal responsibilities in suspected child abuse.
    q. Recognize need for EMT-Basic debriefing following a difficult infant or child transport.
    r. Explain the rationale for having knowledge and skills appropriate for dealing with the infant and child patient.
    s. Attend to the feelings of the family when dealing with an ill or injured infant or child.
    t. Understand the provider's own response (emotional) to caring for infants or children.
    u. Demonstrate the techniques of foreign body airway obstruction removal in the infant.

v. Demonstrate the techniques of foreign body airway obstruction removal in the child.
w. Demonstrate the assessment of the infant and child.
x. Demonstrate bag-valve-mask artificial ventilations for the infant.
y. Demonstrate bag-valve-mask artificial ventilations for the child.
z. Demonstrate oxygen delivery for the infant and child.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP6

30. Describe ambulance call procedures associated with vehicle and patient care.
    a. Discuss the medical and non-medical equipment needed to respond to a call.
    b. List the phases of an ambulance call.
    c. Describe the general provisions relating to the operation of the ambulance and privileges in any or all of the following categories:
        (1) Speed
        (2) Warning lights
        (3) Sirens
        (4) Right-of-way
        (5) Parking
        (6) Turning
    d. List contributing factors to unsafe driving conditions.
    e. Describe the considerations that should be given to:
        (1) Request for escorts
        (2) Following an escort vehicle
        (3) Intersections
    f. Discuss "Due Regard for Safety of All Others" while operating an emergency vehicle.
    g. State what information is essential in order to respond to a call.
    h. Discuss various situations that may affect response to a call.
    i. Differentiate between the various methods of moving a patient to the unit based upon injury or illness.
    j. Apply the components of the essential patient information in a written report.
    k. Summarize the importance of preparing the unit for the next response.
    l. Identify what is essential for completion of a call.
    m. Distinguish among the terms cleaning, disinfection, high-level disinfection, and sterilization.
    n. Describe how to clean or disinfect items following patient care.
    o. Explain the rationale for appropriate report of patient information.
    p. Explain the rationale for having the unit prepared to respond.

Related Academic Topics (See Appendix A): C2, C3, C6, S8
Workplace Skills (See Appendix B): WP3, WP5, WP6

31. Explain the purpose and process of extrication.
    a. Describe the purpose of extrication.
    b. Discuss the role of the EMT-Basic in extrication.
    c. Identify what equipment for personal safety is required for the EMT-Basic.
    d. Define the fundamental components of extrication.
    e. State the steps that should be taken to protect the patient during extrication.
    f. Evaluate various methods of gaining access to the patient.
    g. Distinguish between simple and complex access.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, S8
    Workplace Skills (See Appendix B): WP3, WP5, WP6
32. Recognize and identify hazardous materials and demonstrate knowledge of hazardous procedures.
    a. Explain the EMT-Basic's role during a call involving hazardous materials.
    b. Describe what the EMT-Basic should do if there is a reason to believe that there is a hazard at the scene.
    c. Describe the actions that an EMT-Basic should take to ensure bystander safety.
    d. State the role the EMT-Basic should perform until appropriately trained personnel arrive at the scene of a hazardous materials situation.
    e. Break down the steps to approaching a hazardous situation.
    f. Discuss the various environmental hazards that affect EMS.
    g. Describe the criteria for a multiple-casualty situation.
    h. Evaluate the role of the EMT-Basic in the multiple-casualty situation.
    i. Summarize the components of basic triage.
    j. Define the role of the EMT-Basic in a disaster operation.
    k. Describe basic concepts of incident management.
    l. Explain the methods for preventing contamination of self, equipment, and facilities.
    m. Review the local mass casualty incident plan.
    n. Perform triage, given a scenario of a mass casualty incident.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, S8
    Workplace Skills (See Appendix B): WP3, WP5, WP6

EMERGENCY MEDICAL TECHNOLOGY - PARAMEDIC COURSES

Course Name: Prehospital Environment

Course Abbreviation: EMT 1123

Classification: Vocational-Technical Core

Description: This course introduces the student to the technical, professional, and ethical applications of the prehospital environment. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: EMT Basic (EMT 1114)

Competencies and Suggested Objectives:

1. Discuss the effects of stress and techniques for its management.
   a. Define the term stress.
   b. Name the causes of stress.
   c. Describe the three phases of the stress response.
   d. Name and describe at least five defense mechanisms commonly used to deal with stress.
   e. Describe factors that determine whether anxiety is a positive or negative response.
   f. Describe the common physiologic effects of stress.
   g. Describe behavior that is a manifestation of stress in the following:
      (1) patients
      (2) patients' families
      (3) the Emergency Medical Technician-Paramedic (EMT-P)
   h. Name common causes of job stress for the EMT-P.
   i. Describe various techniques the EMT-P may use to manage stress.
   j. Describe the stages of the grief process.
   k. Describe common needs of (a) the patient, (b) the family, and (c) the EMT-P in dealing with death and dying.
   l. Describe common management techniques used by the EMT-P when a patient is dead or dying.
   m. Identify issues of controversy in prehospital care involving death and dying.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, S1
   Workplace Skills (See Appendix B): WP2, WP3
2. Distinguish between the EMT (Basic, Intermediate, and Paramedic) roles and responsibilities as healthcare professionals.
   a. Define the term "professional."
   b. Define the term "health care professional."
   c. Define the terms "ethics" and "professionalism."
   d. Describe the differences between ethical behavior and legal requirements.

e. Identify whether a particular activity is professional or unprofessional given certain patient care situations.
f. State certain activities that are most appropriate to professional behavior.
g. State specific activities that are most appropriate to ethical behavior.
h. Identify whether a particular activity is unethical and/or illegal given certain patient care situations.
i. Identify whether a particular activity is ethical or unethical given certain patient care situations.
j. Identify and describe those activities performed by an EMT-P in the field.
k. Define the role of an EMT-P.
l. Describe and contrast the difference between an EMT-Ambulance, EMT-Intermediate, and EMT-Paramedic training program.
m. List current state requirements for EMT-P continuing education.
n. Define and discuss at least three reasons why continuing education is important for the EMT-P.
o. Define the terms "certification," licensure," and "registration."
p. Name and describe current state legislation outlining the scope of prehospital advanced life support.
q. State the reason that it is important to keep one's EMT-P certification current.
r. State the major purposes of a national association.
s. State the major purposes of a national registration agency.
t. State the major benefits of subscribing to professional journals.
u. State the benefits for an EMT-P to teach in his/her community.

Related Academic Topics (See Appendix A): C1, C3, C4, C6
Workplace Skills (See Appendix B): WP2, WP3, WP6

3. Recognize and analyze aspects of the EMS systems in relation to the prehospital setting.
   a. Discuss citizen access and the various mechanisms of obtaining it.
   b. Discuss prehospital care as an extension of hospital care.
   c. Define stabilization of patients.
   d. Define and describe medical control.
   e. Define physician responsibility for medical control.
   f. Describe the relationship between the physician on the scene, the EMT-P, and the physician on the radio in the following situations:
      (1) Physician is with the patient when the EMT-P arrives.
      (2) Physician arrives on the scene after the EMT-P has started evaluating and treating the patient.
   g. Describe the benefits of EMT-P follow-up on patient condition, diagnosis, and retrospective review of prehospital care.
   h. Describe KKK-A-1822C (1990) Ambulance standards.
   i. Define the American College of Surgeons Essential Equipment List and how it relates to local state laws.

j. Define the national standard levels of prehospital provider as defined by curriculum.
k. Discuss ambulance placement and the parameters that should be utilized in its development, including the differences in urban, suburban, and rural settings.
l. Discuss the medical community role in overseeing prehospital care.
m. Define protocols and standing orders.
n. Describe the development of protocols.
o. Define local training standards.
p. Describe the legislation in the EMT-P's state regarding prehospital care.
q. Describe integration of prehospital care into the continuum of total patient care with the Emergency Department phase of hospital care.
r. Discuss replacement of equipment and supplies.
s. Discuss the EMT-P's initial responsibilities when arriving on the scene.
t. Discuss the varying philosophies between the management of medical patients and trauma patients (prehospital).
u. Describe the transition of patient care from the EMT-P, including the following:
   (1) Transfer of responsibility (legal and medical)
   (2) Reporting of patient status to physician or nurse
v. Describe the ability of physician run critique based on documentation.
w. Describe retrospective evaluation of patient care including run report review, continuing education, skill practice, and skill deterioration.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6
Workplace Skills (See Appendix B): WP1, WP3, WP5

4. Identify and interpret statutes, laws, and guidelines associated with the prehospital environment.
   a. Discuss the significance and scope of the following in relationship to EMT practice:
      (1) State Medical Practice Act
      (2) Good Samaritan Act/Civil Immunity
      (3) State EMS Statutes
      (4) State Motor Vehicle Codes
      (5) State and local guidelines for "Do Not Resuscitate"
   b. Define the following:
      (1) Negligence
      (2) Medical liability
      (3) Tort
      (4) Duty to act
      (5) Battery
      (6) Slander
      (7) Informed consent
      (8) Expressed consent
      (9) Implied consent

(10) Abandonment
(11) Liable
(12) Assault
(13) False imprisonment

c. Describe the significance of accurate documentation and recordkeeping in substantiating an incident.
d. Identify those situations that require the EMT-P to report those incidents to appropriate authorities.
e. Describe the four elements to prove medical liability.
f. Describe the significance of obtaining expressed consent.
g. Describe the extent to which force and restraint may be used to protect the EMT, the patient, and the third party.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
Workplace Skills (See Appendix B): WP2, WP3, WP6

5. Discuss the components of EMS communications including verbal and technical.
   a. Describe the phases of communications necessary to complete a typical EMS event.
   b. Name the possible components of an EMS communications system and explain the function of each.
   c. Define base station.
   d. Name factors that affect the coverage of mobile transmitters/receivers.
   e. Describe the position of the antenna on a portable transmitter/receiver that will deliver maximum coverage.
   f. Describe an advantage of a repeater system over a non-repeater system.
   g. Describe the vehicular repeater system.
   h. Describe the purpose of a remote console.
   i. Describe the function of a satellite receiver.
   j. Describe the function of an encoder and decoder.
   k. Define hertz, kilohertz, and megahertz.
   l. Define the terms UHF and VHF and distinguish between the two.
   m. Describe the most common causes of interference in biotelemetry communications.
   n. Describe simplex, duplex, and multiplex radio systems.
   o. Describe functions and responsibilities of the Federal Communications Commission (FCC).
   p. Describe the responsibilities of an EMS dispatcher.
   q. Name information items that must be gathered from a caller by the dispatcher.
   r. Describe the ten-code used in the local community.
   s. Describe three communication techniques that influence the clarity of radio transmissions.
   t. Describe three communication techniques that influence the content of radio transmissions.

u. Describe the importance of written medical protocols.
v. Describe two purposes of verbal communication of patient information to the hospital.
w. Describe information that should be included in patient assessment information verbally reported to the physician.
x. Organize a list of patient assessment information in the correct order for radio transmission to the physician according to the format used locally.
y. Name five uses of the written EMS run form.
z. Demonstrate the proper use of a mobile transmitter/receiver to receive and transmit information.
aa. Demonstrate the proper use of a portable transmitter/receiver to receive and transmit information.
bb. Demonstrate the proper use of a digital encoder.
cc. Demonstrate the proper use of a mobile or portable transmitter in a real or simulated patient situation to:
    (1) Organize and transmit patient assessment information, using a standardized format
    (2) Transmit an ECG
dd. Properly complete a written EMS form based on a real or simulated patient situation.

Related Academic Topics (See Appendix A): C1, C3, C4, C6, S6, S8
Workplace Skills (See Appendix B): WP2, WP3, WP5

6. Describe the phases of rescue attempts and discuss the components of each phase.
    a. List the equipment utilized for personal and patient safety during a rescue.
    b. Identify safety hazards that may be encountered in a rescue operation.
    c. Describe the pre-planning phase of a safe rescue.
    d. Describe the elements and resources involved in the assessment phase of a rescue operation.
    e. Define safe patient access.
    f. List the types of equipment available to access an entrapped patient.
    g. Describe the EMT-P's patient assessment and management responsibilities during a rescue operation.
    h. Identify the special expertise for special rescue resources available in the EMT-P's response area.
    i. Identify the difficulties that may be encountered in the patient removal phase of a rescue operation.
    j. Explain the need for a coordinated effort during the removal phase of a rescue operation.
    k. Discuss removal of the patient from the rescue scene.

Related Academic Topics (See Appendix A): C1, C3, C4
Workplace Skills (See Appendix B): WP2, WP3, WP6

7. Identify and categorize the paramedic's response to a major incident.
   a. Define the term "major incident."
   b. Identify the local "communication" system.
   c. Describe when a major "incident" should be declared.
   d. Describe the "pre-planning phase" function.
   e. Describe area "response planning."
   f. Describe the components of special resources.
   g. Describe the function of "scene command."
   h. Describe the function of "scene triage."
   i. Describe the "transferring command function."
   j. Describe section and staging management.
   k. Describe a system for patient identification.
   l. Describe scene medical control.
   m. Identify "who's in charge."

   Related Academic Topics (See Appendix A): C1, C3, C6
   Workplace Skills (See Appendix B): WP2, WP6

Course Name: Body Systems

Course Abbreviation: EMT 1133

Classification: Vocational-Technical Core

Description: This course provides information on the structure and function of body systems. This course includes the medical terminology used by paramedics. (3 sch: 3 hr. lecture)

Pre/Corequisites: Prehospital Environment (EMT 1123)

Competencies and Suggested Objectives:

1. Recognize and discuss word components, terms, procedures, and abbreviations related to the various body systems.
   a. Define and contrast medical terms.
   b. Identify various medical terms associated with one or more anatomical parts of the body.
   c. Identify common medical abbreviations.
   d. Identify common root words and determine the meaning of each.
   e. Identify and define common prefixes and suffixes.
   f. Locate one or more medical terms in a medical dictionary.

   Related Academic Topics (See Appendix A): C1
   Workplace Skills (See Appendix B): WP2
2. Explain structures and function of body systems including cells, tissues, organs, and systems as they relate to physiologic integrity.
   a. Identify and describe the function of the structures of the upper respiratory tract.
   b. Identify and describe the function of the structures of the lower respiratory tract.
   c. Define the terms respiration and pulmonary ventilation.
   d. Describe the physiology of the respiratory cycle.
   e. Describe the pulmonary circulation.
   f. Describe the process of gas exchange in the lungs.
   g. Describe the size, shape, and location/orientation (in regard to other body structures) of the heart muscle.
   h. Identify the location of the following structures on a diagram of the normal heart:
      (1) Pericardium
      (2) Myocardium
      (3) Epicardium
      (4) Right and left atria
      (5) Interatrial septum

(6) Right and left ventricles
(7) Intraventricular septula
(8) Superior and inferior vena cava
(9) Aorta
(10) Pulmonary vessels
(11) Coronary arteries
(12) Tricuspid valve
(13) Mitral valve
(14) Aortic valve
(15) Pulmonic valve
(16) Papillary muscles
(17) Chordae tendinae

i. Describe the function of each of the following structures:
(1) Pericardium
(2) Myocardium
(3) Epicardium
(4) Right and left atria
(5) Interatrial septum
(6) Right and left ventricles
(7) Intraventricular septula
(8) Superior and inferior vena cava
(9) Aorta
(10) Pulmonary vessels
(11) Coronary arteries
(12) Tricuspid valve
(13) Mitral valve
(14) Aortic valve
(15) Pulmonic valve
(16) Papillary muscles
(17) Chordae tendinae

j. Differentiate between the structural and functional aspects of arterial and venous blood vessels.

k. Name and describe the location of five major arteries and five major veins.

l. Describe the structure and function of capillaries.

m. Describe the course of blood flow through the normal heart and lungs.

n. Describe the cardiac cycle in terms of mechanical function and relative position of heart valve.

o. Describe the functional differences between the right heart and left heart pumps.

p. Define blood pressure.

q. Define hormone.

r. Discuss hormone production, including function and the single most important factor influencing production.

s. Discuss the pituitary gland, including:
   (1) Location
   (2) Function
      (a) Anterior pituitary gland
      (b) Posterior pituitary gland

t. Discuss the thyroid gland, including:
   (1) Location
   (2) Function
   (3) Parathyroid gland

u. Discuss the adrenal glands, including:
   (1) Location
   (2) Function
      (a) Adrenal cortex
      (b) Adrenal medulla

v. Discuss the pancreas, including:
   (1) Location
   (2) Structure
   (3) Function

w. Discuss the function of insulin, including the following cycles:
   (1) Absorption of glucose/insulin secretion to glucose
   (2) Insulin secretion
   (3) Glucose metabolism
   (4) Return to homeostasis

x. List and briefly discuss the two functions of the islet of Langerhans.

y. Discuss the function of glucagon, including the following cycles:
   (1) Lowering blood glucose concentration
   (2) Secretion of glucagon
   (3) Increase of blood glucose concentration
   (4) Return to homeostasis

z. Identify and describe the location and functions of the following:
   (1) Ovaries
   (2) Fallopian tubes
   (3) Uterus
   (4) Vagina
   (5) Cervix
   (6) Perineum
   (7) Labia
   (8) Endometrium

aa. Discuss estrogen and progesterone.

bb. Identify and describe the location and functions of the following:
   (1) Scrotum
   (2) Testes
   (3) Epididymis
   (4) Vas deferens

(5) Prostate
(6) Urethra
(7) Penis

cc. Identify the parts of a neuron and describe their functions.
dd. Describe the process of impulse transmission for nerve cells.
ee. Describe the types of nerve cells by function.
ff. Identify and describe the protective mechanisms of the brain.
gg. List the parts of the brain.
hh. Identify the functions of the spinal cord.
ii. Describe the protective mechanisms for the spinal cord.
jj. Identify the divisions of the spinal column.
kk. Identify the divisions of the spinal cord.
ll. Describe and discuss the function of the primary gastrointestinal organs, including:
(1) Mouth
(2) Pharynx
(3) Esophagus
(4) Stomach
(5) Intestines (large/small)
(6) Rectum
(7) Peritoneum

mm. Describe and discuss the function of the gastrointestinal accessory organs, including:
(1) Salivary glands
(2) Teeth
(3) Liver
(4) Gallbladder
(5) Pancreas
(6) Veriform appendix

nn. Name the organs in the following locations:
(1) Right upper quadrant
(2) Left upper quadrant
(3) Right lower quadrant
(4) Left lower quadrant

oo. Identify and describe the function of the structures of the urinary system.
pp. Identify and describe the function of the structures of the musculoskeletal system.
qq. Identify and describe the function of the structures of the integumentary system.

Related Academic Topics (See Appendix A): C1, C2, C6, S1, S5, S6, S8
Workplace Skills (See Appendix B): WP3, WP6

Course Name: Patient Assessment and Airway Management

Course Abbreviation: EMT 1213

Classification: Vocational-Technical Core

Description: This course will teach a systematic approach to patient assessment and management. It will include the pathophysiology and management of specific respiratory conditions. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/Corequisites: Prehospital Environment (EMT 1123) and Body Systems (EMT 1133)

Competencies and Suggested Objectives:

1. Implement an assessment technique allowing for early identification and intervention in selected life threatening illness/injury and non-emergent conditions.
   a. Establish priorities of care based on threat-to-life conditions.
   b. Describe the four phases of patient assessment.
   c. Discuss the possible environmental hazards that the EMT may encounter and the means of protecting him/her in this environment.
   d. Describe the environmental hazards which a patient might encounter.
   e. Describe the mechanisms of stabilizing an automobile to prevent injury while extricating the patient.
   f. Describe the problems an EMT-P might encounter in a hostile situation and describe mechanisms of management.
   g. Describe the various types of protective equipment available to the EMT-P for self-protection and patient protection.
   h. Discuss the appropriate methods of patient protection in each situation.
   i. Describe the emergency situations the EMT may encounter and describe the management of each.
   j. Discuss backup personnel, transportation, and equipment.
   k. Define and describe the various classifications of emergencies which an EMT will encounter. Base this on medical needs.
   l. Discuss how the assessment and management differ.
   m. Describe the primary survey and what areas are critical to evaluate.
   n. Describe the anatomy of the following: upper airway, tongue, hypopharynx, nasopharynx, oropharynx, larynx, vocal cords.
   o. Describe the function of the vocal cords
   p. Describe the flow of air from outside the body into the trachea.
   q. Describe the reasons for and mechanism of humidification and warming of the air as it passes through the naso and oral pharynx.

r. Describe the pathological conditions that can occur in the nose, pharynx, and larynx to obstruct or retard air flow and identify the complications of laryngeal fracture.
s. Describe the methods of airway management.
t. Describe the methods and management of an obstructed airway.
u. Describe the mechanical methods of airway management including the benefits and limitations (oral, nasal, and EOA).
v. Describe the trans-tracheal mechanisms of airway ventilation, including the benefits and limitations.
w. Describe how the cervical spine is protected throughout these maneuvers.
x. Describe the anatomy of the following:
   (1) Lungs
   (2) Trachea
   (3) Alveolus
   (4) Diaphragm
   (5) Thoracic wall
   (6) Pleural space
y. Describe how pulmonary ventilation (inhalation and exhalation) is accomplished.
z. Describe the gaseous exchange across the alveoli-capillary membrane (O_2 and CO_2).
aa. Describe the pulmonary problems that can complicate exhalation and inhalation, the mechanisms by which they reduce ventilation, and management of each problem, including the following:
   (1) Open pneumothorax
   (2) Diaphragmatic injury
   (3) Closed pneumothorax (simple and tension)
   (4) Flail chest
bb. Describe the problems of ventilation.
cc. Define mouth-to-mask ventilation, its benefits, and its limitations.
dd. Discuss the bag-valve mask, its benefits, and its limitations.
ee. Discuss the techniques for evaluating the effectiveness of ventilation.
ff. Describe the anatomy of the heart and the cardiovascular system.
gg. Describe the problems that occur with decreased perfusion.
hh. Describe the pathophysiology of cardiac arrest.
ii. Describe the mechanisms of evaluating the effectiveness of perfusion, including pulse, skin color, and capillary refill.
jj. Discuss ventilation with an EOA (benefits and limitations).
kk. Discuss ventilation with an endotracheal tube (benefits and limitations) (optional at EMT-I level).
ll. Describe the equipment and method of suctioning the airway, pharynx, and endotracheal tube (optional at EMT-I level).

mm. Describe the anatomy of the skin, bones, vessels, and subcutaneous tissue as each relates to hemorrhage control.

nn. Discuss the benefits and complications of hemorrhage control by the following means:
   (1) Direct pressure
   (2) Tourniquets
   (3) Hemostats

oo. Define a mini-neurological examination (level of consciousness).

pp. Describe exposing the patient's body for total evaluation.

qq. Discuss when exposure of the patient's body should and should not be carried out.

rr. Define shock.

ss. Describe the reasons for and mechanisms of patient reassessment in the resuscitation phase.

tt. Define the components of secondary survey and its benefits for patient evaluation.

uu. Describe the assessment of the head, neck, thorax, abdomen, extremities, and nervous system.

vv. Describe the trauma score, define its usefulness, and explain how it is accomplished.

ww. Discuss the impcrtant components which must be identified in taking an appropriate history from a patient.

xx. Describe which laboratory studies should be drawn in the field when the IV is started and their usefulness.

yy. Define the definitive care phase.

zz. Describe how a patient is packaged and stabilized for transportation to the hospital, including airway ventilation, intravenous (IV) fluids, pneumatic anti-shock garment, fracture stabilization, and bandaging.

aaa. Describe how the patient is immobilized to the backboard.

bbb. Describe how the patient is immobilized to the stretcher and to the ambulance.

ccc. Describe patient extrication.

ddd. Describe how the patient is monitored en route to the hospital.

eee. Describe how the hospitals are selected for receipt of patients based on patient need and hospital capability.

fff. Describe the benefits and complications of lights and sirens and when these should be used.

ggg. Describe the interaction between the EMT and Medical Command Authority in regard to receiving hospital, family physician on the scene, bystander physician on the scene, orders for patient care, needs of the family, and needs of the patient.

hhh. Describe the usefulness of a run report.

iii. Describe the mechanisms of continued evaluation of the patient en route to the hospital.

jjj. Perform a rapid assessment of the patient to identify priorities for care.
kkk. Demonstrate the assessment of the head, neck, thorax, abdomen, extremities, and neurological system.
lll. Demonstrate effective mouth-to-mask ventilation.
mmm. Demonstrate effective bag valve:
(1) Mask
(2) EOA
(3) ET
nnn. Demonstrate effective cardiopulmonary resuscitation.
ooo. Demonstrate the manual methods of airway management.
ppp. Demonstrate the methods of management of an obstructed airway.
qqq. Demonstrate the mechanical methods of airway management:
(1) Nasal
(2) Oral
(3) EOA
(4) ET (Optional at EMT-I level)
rrr. Demonstrate the use of self-protection equipment such as air pack (breathing apparatus), etc.
sss. Demonstrate the use of various types of portable and fixed suction devices.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S1, S5, S8
Workplace Skills (See Appendix B): WP3, WP5, WP6

2. Discuss the pathophysiology of specific selected respiratory conditions and the management of those conditions.
a. Describe anatomy of the mouth, hypopharynx, trachea, and larynx.
b. Describe the relationship between:
(1) Cords and larynx
(2) Esophagus and larynx
(3) Epiglottis and larynx
(4) Tongue and larynx
(5) True cords and false cords
(6) Pharynx and larynx
c. Describe laryngoscope, suction, endotracheal tube, and bag-valve mask.
d. Discuss indications and contraindications of endotracheal intubation.
e. Discuss alternatives to endotracheal intubation.
f. Discuss skill deterioration and methods of prevention.
g. Discuss need for rapid placement of ET tube.
h. Discuss methods of assuring and maintaining correct placement of ET tube.
i. Demonstrate ventilation with bag-valve-mask.
j. Demonstrate placement of ET tube (45 seconds).
k. Demonstrate ventilation with bag valve and endotracheal tube.
l. Demonstrate method by assuring and maintaining correct placement of ET tube.

m. Demonstrate reventilation for missed intubation.

n. Demonstrate skills described above on both mannequin and live patient.

Related Academic Topics (See Appendix A): C1, C2, C6, S1, S8

Workplace Skills (See Appendix B): WP3, WP5

Course Name: Defibrillation Skills

Course Abbreviation: EMT 1222

Classification: Vocational-Technical Core

Description: This course will provide instruction on basic ECG interpretation, the normal electrical activity of the heart, defibrillation, and the recognition of certain life-threatening arrhythmias. (2 sch: 1 hr. lecture, 2 hr. lab)

Pre/Corequisites: Prehospital Environment (EMT 1123) and Body Systems (EMT 1133)

Competencies and Suggested Objectives:

1. Discuss the anatomy and physiology of the heart.
   a. Describe the size, shape, and location/orientation (in regard to other body structures) of the heart muscle.
   b. Identify the location of the following structures on a diagram of the normal heart:
      (1) Pericardium
      (2) Myocardium
      (3) Epicardium
      (4) Right and left atria
      (5) Interatrial septum
      (6) Right and left ventricles
      (7) Intraventricular septula
      (8) Superior and inferior vena cava
      (9) Aorta
      (10) Pulmonary vessels
      (11) Coronary arteries
      (12) Tricuspid valve
      (13) Mitral valve
      (14) Aortic valve
      (15) Pulmonic valve
      (16) Papillary muscles
      (17) Chordae tendina
   c. Describe the function of each of the following structures:
      (1) Pericardium
      (2) Myocardium
      (3) Epicardium
      (4) Right and left atria
      (5) Interatrial septum
      (6) Right and left ventricles

(7) Intraventricular septula
(8) Superior and inferior vena cava
(9) Aorta
(10) Pulmonary vessels
(11) Coronary arteries
(12) Tricuspid valve
(13) Mitral valve
(14) Aortic valve
(15) Pulmonic valve
(16) Papillary muscles
(17) Chordae tendina

d. Describe the distribution of the coronary arteries and the parts of the heart supplied by each artery.
e. Differentiate between the structural and functional aspects of arterial and venous blood vessels.
f. Define the following terms that refer to cardiac physiology:
(1) Stroke volume
(2) Starling's Law
(3) Preload
(4) Afterload
(5) Cardiac output
(6) Blood pressure
g. Describe the electrical properties of the heart.
h. Describe the normal sequence of electrical conduction through the heart and state the purpose of this conduction system.
i. Describe the location and function of the following structures of the electrical conduction system:
(1) SA node
(2) Internodal and interatrial tracts
(3) AV node
(4) Bundle of His
(5) Bundle branches
(6) Purkinje fibers
j. Name the three areas of the heart possessing pacemaking capabilities and state the intrinsic (inherent) rates of each area.
k. Define cardiac depolarization and repolarization and describe the major electrolyte changes that occur in each process.

Related Academic Topics (See Appendix A): C1, C2, C5, S1
Workplace Skills (See Appendix B): WP2

2. Analyze and interpret an electrocardiogram to identify selected arrhythmias.
a. Describe an ECG.
b. Define the following terms as they relate to the electrical activity of the heart:
(1) Isoelectric line

(2) QRS complex
(3) P wave
(4) T wave
(5) PR interval
(6) ST segment
(7) Absolute and Relative Refractory Period

c. State the numerical values assigned to each small and large box on the ECG graph paper for each axis.
d. Define ECG artifact and name the causes.
e. State the steps in the analysis format of ECG rhythm strips.
f. Describe three common methods for calculating heart rate on an ECG rhythm strip and the indications for using each method.
g. Name eight causes of dysrhythmia.

Related Academic Topics (See Appendix A): C1, C2, C4, C6, M2, S8
Workplace Skills (See Appendix B): WP2, WP6

3. Recognize signs and symptoms of cardiac abnormalities and explain appropriate management.
   a. Name the common chief complaints of cardiac patients.
   b. Describe the common characteristics of the pain/discomfort that occurs in angina pectoris and acute myocardial infarction.
   c. Describe why the following occur in patients with cardiac problems:
      (1) Chest pain or discomfort
      (2) Shoulder, arm, neck, or jaw pain/discomfort
      (3) Dyspnea
      (4) Syncope
      (5) Palpitations/abnormal heartbeat
   d. Describe those questions to be asked during history taking for each of the common chief cardiac complaints.
   e. Identify common prescription drugs that a patient may be taking for cardiovascular problems.
   f. Demonstrate the correct procedure for obtaining a history and performing a physical exam for cardiac related problems.
   g. Demonstrate assessment techniques and emergency management of patients.
   h. Describe the four most pertinent aspects of the past medical history in a patient with a suspected cardiac problem.
   i. Describe those aspects of the physical examination that should be given special attention in the patient with suspected cardiac problems.
   j. Describe the significance of the following physical exam findings in a cardiac patient:
      (1) Altered level of consciousness
      (2) Peripheral edema

(3) Cyanosis
(4) Poor capillary refill
(5) Cool, clammy skin

k. Correctly identify and treat within the scope of practice the following dysrhythmias:
(1) Asystole
(2) V-fib
(3) Pulseless b-tach
(4) Normal sinus rhythm
(5) EMD
(6) Artifact
(7) PVC recognition

l. Describe the pathophysiology, signs and symptoms, and prehospital management (including drug therapy) of each of the following conditions:
(1) acute myocardial infarction
(2) cardiac arrest

Related Academic Topics (See Appendix A): C1, C4, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP6

4. Utilize a cardiac monitor/defibrillator to acquire an ECG tracing and/or correct ventricular arrhythmias.
a. Describe what type of information can and cannot be obtained from a monitoring lead.
b. Describe information obtained from the vertical and horizontal axes of the ECG graph paper.
c. Describe the normal parameters for the following aspects of an ECG rhythm strip.
d. Describe the indications for use of a precordial thump.
e. Describe proper use of the following devices used for defibrillation:
(1) Manual monitor/defibrillator
(2) Semi-automatic monitor/defibrillator
(3) Automatic monitor/defibrillator or automatic defibrillator
f. Demonstrate proper application of ECG chest electrodes and obtain a sample Lead II, and ML1 rhythm strip.
g. Identify the following on a rhythm strip:
(1) P waves
(2) QRS complexes
(3) P-P intervals
(4) R-R intervals
(5) PR intervals
(6) ST segments
(7) T waves
(8) Isoelectric line
h. Demonstrate the proper use of the defibrillator paddle electrodes to obtain a sample Lead II rhythm strip.

i. Demonstrate how to properly assess the cause of poor ECG tracing.
j. Demonstrate correct operation of a monitor/defibrillator to perform manual defibrillation on an adult and an infant.
k. Describe energy recommendations for defibrillation of adult and pediatric patients.
l. Demonstrate the proper technique for administering a precordial thump.

Related Academic Topics (See Appendix A): C1, C2, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP5

Course Name: Shock, Trauma, And Burn Management

Course Abbreviation: EMT 1315

Classification: Vocational-Technical Core

Description: This course will involve instruction in shock principles, trauma, and burn management. (5 sch: 3 hr. lecture, 4 hr. lab)

Prerequisites: Prehospital Environment (EMT 1123) and Body Systems (EMT 1133)

Competencies and Suggested Objectives:

1. Explain the pathophysiology of hypoperfusion.
   a. Define shock based on aerobic and anaerobic metabolism.
   b. Define management based on the Fick Principle.
   c. Discuss the prevention of anaerobic metabolism.
   d. Discuss red blood cell oxygenation in the lungs based on alveolar O_2 levels and transportation across the alveolar capillary wall.
   e. Discuss tissue oxygenation based on tissue profusion and off-loading of oxygen.
   f. Discuss the role played by respiration or inadequate ventilation in the management of shock.
   g. Describe perfusion and the mechanisms of improvement of cardiac output based on the strength and rate of contractions.
   h. Discuss the role of preload in improving cardiac output.
   i. Discuss the fluid component of the cardiovascular system and the relationship between the volume of the fluid and the size of the container.
   j. Discuss afterload (systemic vascular resistance (SVR)), the relationship of diastolic pressure to the SVR, and the effect of diastolic pressure on coronary circulation.
   k. Discuss the container size in its relationship to the fluid volume and the effect on preload.
   l. Discuss body fluids based on total body water, intracellular fluid, and extracellular fluid.
   m Identify the significant anions and cations in the body.
   n. Describe the role of serum protein in association with diffusion.
   o. Discuss osmosis, including a discussion of semipermeable membranes and their function.
   p. Define isotonic fluids, hypotonic fluids, and hypertonic fluids.
   q. Define and discuss diffusion.
   r. Define active transport.
   s. Describe the mechanisms of concentration of electrolytes.

t. Define acid-base balance.
u. Discuss acid-base balance based on hydrogen ion concentration and pH buffer systems.
v. Define and discuss the following:
   (1) Respiratory acidosis
   (2) Respiratory alkalosis
   (3) Metabolic acidosis
   (4) Metabolic alkalosis
w. Describe the mechanism of the body response to perfusion change.
x. Identify the role of the baroreceptor.
y. Describe how the actions of the baroreceptor affect blood pressure and perfusion.
z. Describe compensated shock.
aa. Describe uncompensated shock, including both cardiac and peripheral effects.
bb. Describe how anaerobic metabolism at the cellular level can lead to death several days later.
cc. Discuss the effects of decreased perfusion at the capillary level, both on the capillary lining as well as the cell; include a discussion of increased interstitial fluid.
dd. Describe the three phases in the capillary cellular relationship (ischemia, stagnant, and washout).
ee. Discuss the evaluation of the patient's perfusion status, based on physical observations within the primary survey, including pulse, skin, temperature, and capillary refill.
ff. Discuss the relationship of the neurological exam to evaluation of hypoperfusion and oxygenation.
gg. Describe the information provided by the following in physical examination: pulse, blood pressure, diastolic pressure, systolic pressure, skin color, appearance, temperature, and respiration.

Related Academic Topics (See Appendix A): C1, C4, C5, S5, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

2. Discuss the management techniques used in treatment of shocks and demonstrate proper use of shock resuscitation skills.
   a. Discuss resuscitation of a shock patient. Include red cell oxygenation, tissue ischemic sensitivity, IV fluids, and the Pneumatic Anti-Shock Garment.
   b. Describe the beneficial and detrimental effects of the Pneumatic Anti-Shock Garment.
   c. Describe the indication and contraindications for the Pneumatic Anti-Shock Garment.
   d. Discuss fluid replacement, the types of fluid that are available, and the benefits and detrimental effects of each.
   e. Discuss how fluid replacement is monitored and controlled.

f. Discuss the routes of fluid replacement and the advantages and disadvantages of each.
g. Demonstrate in order of priority the steps of shock resuscitation.
h. Demonstrate the use of the Pneumatic Anti-Shock Garment.
i. Describe the indications and contraindications of the Pneumatic Anti-Shock Garment and how it affects the patient in each.

Related Academic Topics (See Appendix A): C1, C3, C4, C6, S1
Workplace Skills (See Appendix B): WP2, WP6

3. Describe a general approach to trauma care.
   a. Describe the general needs of the trauma patient and the steps within each area of need which must be addressed.
   b. Describe the areas in which trauma care is rendered and a general overview of care in each of those areas.
   c. Define the priorities of trauma management.
   d. Describe triage with multiple patients.
   e. Describe the steps in the general assessment of patient care.
   f. Describe the steps in the primary survey of patient care.
   g. Describe how a patient is exposed for examination.
   h. Describe when a patient should and should not be exposed for examination.
   i. Explain how assessment can be completed with only a partially exposed patient.
   j. Describe the various steps in the assessment of the effectiveness of resuscitation techniques.
   k. Describe the components of a complete prehospital history and the significance of each component.
   l. Describe the components of the history that are important to prehospital examination and those that are not.

   Related Academic Topics (See Appendix A): C1, C3, C4, C5
   Workplace Skills (See Appendix B): WP2, WP3, WP6

4. Discuss trauma related to the respiratory system to include assessment and management techniques.
   a. Explain the anatomy of the airway relative to traumatic injury.
   b. Describe pathophysiological problems that occur in the airway.
   c. Describe the management of the airway in relationship to the individual pathophysiological problems that occur.
   d. Describe the relationship of the cervical spine to airway management.
   e. Describe how the airway is managed protecting the cervical spine.
   f. Describe the construction of the various devices used in airway management.
   g. Describe the advantages and disadvantages of each device used in airway management.
   h. Describe those steps in airway management that are hospital techniques and not prehospital techniques and why.

i. Describe the anatomy of the chest.
j. Describe the physiology of pulmonary expansion.
k. Describe those pathophysiological conditions that limit ventilation and pulmonary expansion.
l. Describe the assessment of ventilation and the various pathological conditions that can compromise this ventilation.
m. Describe the management of compromised ventilations.
n. Describe the management of conditions that compromise pulmonary expansion.
o. Describe the advantages and disadvantages of the various ventilation techniques and devices.
p. Describe a pneumothorax and its three variations.
q. Describe the general examination of the thoracic cavity.
r. Describe the anatomy of the thoracic cavity.
s. Describe the physiology of the thoracic cavity including ventilation, respiration, and acid-base balance.
t. Explain the assessment of the thoracic cavity.
u. Describe the stethoscope, how it works, and its uses in the physical examination.
v. Describe how the physical examination of the thoracic cavity is conducted in steps and the various pathophysiologic processes that each step can identify.
w. Describe the pathophysiology and prehospital management of a pneumothorax, a tension pneumothorax, and an open pneumothorax.
x. Describe the pathophysiology and management of a flail chest.
y. Describe the hemothorax and the prehospital significance of such a condition.
z. Describe a pulmonary contusion and its prehospital significance and management.

Related Academic Topics (See Appendix A): C1, C3, C4, C6, S1, S5
Workplace Skills (See Appendix B): WP2, WP3, WP6

5. Discuss trauma related to the circulatory system to include assessment and management techniques.
   a. Describe the management of circulatory and hemorrhage problems.
   b. Explain the anatomy of the heart and cardiovascular system relative to traumatic injury.
   c. Explain the physiology and pathophysiology of shock.
   d. Explain the assessment of circulatory sufficiency.
   e. Describe those components of assessment which are most easily obtained in the primary surveys and their individual significance.
   f. Describe the management of perfusion problems.
   g. Integrate the pathophysiology of shock and its management in relationship to the Fick Principle.

h. Describe the methods of hemorrhage control that should be used in the prehospital setting and those that should not and why.
i. Describe resuscitation of the trauma patient based upon the Fick Principle.
j. Describe cardiac tamponade based on anatomy, physiology, pathophysiology, and management.
k. Describe the need/non-need of prehospital management of a cardiac tamponade.
l. Describe cardiac contusion, including anatomy, pathophysiology, methods of assessment, significance of dysrthymias that occur, and its management.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP6

6. Discuss trauma related to the abdomen and pelvis to include assessment and management techniques.
   a. Describe the abdominal examination and the significance of the abdominal pathology in the prehospital phase.
   b. Explain the anatomy of the abdomen relative to traumatic injury.
   c. Describe the physiology of the abdomen.
   d. Describe the pathophysiologic processes of the abdomen that affect prehospital care.
   e. Explain the assessment of the abdomen.
   f. Describe the management of these pathological processes.
   g. Describe pathophysiology and management of pelvic fractures.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP6
7. Discuss trauma related to the extremities to include assessment and management techniques.
   a. Describe the management of extremity injuries, both upper and lower.
   b. Describe the anatomy of the upper and lower extremities.
   c. Describe the pathophysiological processes that affect the upper and lower extremities.
   d. Describe the management of fractures.
   e. Describe the management of dislocation, explaining which should be reduced prehospital, which should not, and why.
   f. Describe the management for lacerations.
   g. Describe the various types of splints which can be used for the immobilization of fractures, and list the advantages and disadvantages for each.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP6
8. Discuss trauma related to the head and neck to include assessment and management techniques.
   a. Describe the mini-neurological exam.

b. Describe the mini-neurological exam in relationship to perfusion and cerebral injury and the management steps that must be taken to solve these problems.
c. Describe the general overview of a physical examination.
d. Describe the physical examination as it relates to the head.
e. Describe the anatomy of the head and face.
f. Describe those pathophysiologic conditions that require prehospital assessment and management of head and neck injuries.
g. Explain the assessment of the head.
h. Describe the management of the pathophysiologic conditions of the head.
i. Describe the specific head injuries that compromise the airway and why.
j. Describe specific head injuries that produce hemorrhage and how they are managed.
k. Describe the physical examination of the neck.
l. Describe the pathophysiology and anatomy of the neck.
m. Describe the assessment and management of the neck.
n. Describe in detail the short backboard, the various types on the market, and the principles of immobilization of the cervical spine.
o. Describe the anatomy of the spine including the cervical, thoracic, lumbar, and coccygeal regions.
p. Describe the anatomical differences in the various regions.
q. Describe the construction of the vertebrae in the various regions.
r. Describe the pathophysiologic processes that affect the spine including both the bony structures and the neurological structures.
s. Describe the assessment of the spine including the differences in the bony assessment and neurological assessment.

Related Academic Topics (See Appendix A): C1, C2, C3, C5, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP6

9. Describe monitoring of the trauma patient to include evaluation of degree of severity and communications with the hospital.
   a Describe continued monitoring of a patient.
   b. Describe the various scores for assessing the severity of trauma injuries that have prehospital significance and those that do not.
   c. Describe how a patient is monitored.
   d. Describe transportation of a patient to a hospital.
   e. Describe communication with a hospital.
   f. Describe the procedure for the EMT-P-to-physician communication for the following, including the steps, the important information included in each step, and the priority in each of the steps:
      (1) Mouth-to-mask ventilation
      (2) Mouth-to-mouth ventilation
      (3) Bag-valve-mask ventilation
      (4) Demand-valve ventilation

(5) Oral airway insertion
(6) Nasal airway insertion
(7) Endotracheal tube
(8) Esophageal obturator airway
(9) PTL airway
(10) Assessment of adequate ventilations
(11) Management of an open pneumothorax
(12) Decompression of a tension pneumothorax
(13) Insertion of an IV line
(14) Application of MAST trousers
(15) Assessment of reestablishment of perfusion
(16) A mini-neurological examination
(17) Exposure of a patient for physical exam
(18) Physical examination of the head
(19) Physical examination of the neck
(20) Physical examination of the thorax
(21) Physical examination of the abdomen
(22) Physical examination of the upper extremities
(23) Physical examination of the lower extremities
(24) Physical examination of the pelvis
(25) Neurological examination

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S1
Workplace Skills (See Appendix B): WP6

10. Explain the pathophysiology of burn shock in reference to normal anatomy and physiology and the different sources of burn injuries.
    a. Describe the structure and function of the integumentary system.
    b. Define the movement of body fluids between plasma and interstitial compartments.
    c. Define the movement of body fluids between interstitial and intercellular compartments.
    d. Describe the pathophysiology of burn shock.
    e. State the four major sources of burn injury.

    Related Academic Topics (See Appendix A): C1, C2, C5, C6, M1, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
11. Discuss and assess the severity of burn injury.
    a. Describe the four classifications of burn injury.
    b. Describe the three categories of burn injury by severity.
    c. List the factors altering severity of burn injury.
    d. Calculate the percentages of body surface areas burned given a diagram.

    Related Academic Topics (See Appendix A): C1, C3, C4, C6, M1, S5, S8
    Workplace Skills (See Appendix B): WP6
12. Explain and demonstrate shock resuscitation principles of the burn injury patient.
    a. List and describe one of two fluid resuscitation formulas.

b. Explain assessment and management of burn injury by source.
c. Describe management of burn injury when associated with other injuries or when medical conditions are present.
d. List factors contributing to inhalation injury.
e. Explain assessment and management of inhalation injury.

Related Academic Topics (See Appendix A): C1, C3, C4, S5, S8
Workplace Skills (See Appendix B): WP2, WP6

Course Name: Internship for Clinical and Field Experience I

Course Abbreviation: EMT 1713

Classification: Vocational-Technical Core

Description: This course will provide clinical training on the skills and knowledge obtained in classroom. This will be a supervised activity carried out in the clinical and field setting at approved sites. (3 sch: 9 hr. clinical)

Prerequisites: EMT Basic (EMT 1114) and all corequisite first semester courses

Competencies and Suggested Objectives:

1. Perform intermediate level EMT activities.
   a. Measure, interpret, and record vital signs.
   b. Perform patient assessment.
   c. Perform spinal immobilization.
   d. Utilize infection control technique.
   e. Perform splinting.
   f. Perform MAST application.
   g. Perform airway placement.
   h. Perform suctioning.
   i. Perform esophageal airway.
   j. Implement intravenous therapy.
   k. Perform defibrillation.
   l. Perform patient handling/lifting.
   m. Perform hemorrhage control.
   n. Perform oxygen administration.
   o. Perform documentation.
   p. Transmit radio report.
   q. Perform CPR.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6

Course Name: Respiratory Emergencies

Course Abbreviation: EMT 1412

Classification: Vocational-Technical Core

Description: This course will instruct the student in the handling of the respiratory emergency using pharmacological agents and manual mechanical techniques. (2 sch: 1 hr. lecture, 2 hr. lab)

Pre/Corequisites: General Pharmacology (EMT 1512)

Competencies and Suggested Objectives:

1. Explain respiratory emergencies and treatments associated with selected respiratory emergencies.
   a. Discuss the pathophysiology, assessment, and management of the following:
      (1) Emphysema
      (2) Chronic bronchitis
      (3) Asthma
         (a) Adult
         (b) Pediatric
      (4) Pneumonia
      (5) Toxic inhalation
      (6) Pulmonary embolism
      (7) Hyperventilation syndrome
      (8) Central nervous system dysfunctions
   b. Identify the normal partial pressures of oxygen and carbon dioxide in the alveoli, venous blood, and arterial blood.
   c. Identify the systems involved in the process of regulation of respiration.
   d. Demonstrate the techniques of inspection, auscultation, and palpation in examining the thorax.
   e. Identify the following abnormal lung sounds:
      (1) Stridor
      (2) Wheezes
      (3) Rales
      (4) Rhonchi
   f. Demonstrate the ability to obtain an appropriate history when evaluating patients with respiratory complaints.
   g. Demonstrate the ability to perform an appropriate assessment when evaluating patients with respiratory complaints.

h. For the following drugs, identify the pharmacology and actions, the indication, precaution, administration, and side effects for the adult and pediatric patient:
   (1) Oxygen
   (2) Epinephrine
   (3) Bronksol
   (4) Racemic epinephrine
   (5) Aminophylline
   (6) Diphenhydramine

i. Demonstrate the ability to appropriately administer the following drugs for the adult and pediatric patient:
   (1) Oxygen
   (2) Epinephrine
   (3) Bronksol
   (4) Racemic epinephrine
   (5) Aminophylline
   (6) Diphenhydramine

j. Demonstrate the technique of direct laryngoscopy.

k. Demonstrate the upper airway obstruction protocol according to American Heart Association standards.

Related Academic Topics (See Appendix A): C1, C3, C4, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP6

Course Name: Cardiovascular Emergencies

Course Abbreviation: EMT 1425

Classification: Vocational-Technical Core

Description: This course will provide instruction in the integration of medical history, pathophysiology, signs and symptoms, assessment, and management of cardiovascular conditions. (5 sch: 3 hr. lecture, 4 hr. lab)

Pre/Corequisites: Internship for Clinical and Field Experience I (EMT 1713)

Competencies and Suggested Objectives:

1. Explain selected physiology in reference to cardiac functioning.
   a. Describe the effects of increased heart rate on the contraction and relaxation phases of the cardiac cycle.
   b. Describe nerve innervation of the heart.
   c. Name the chemical mediator of the parasympathetic nervous system and describe its primary effect on the heart.
   d. Name the chemical mediator of the sympathetic nervous system and describe the mechanical, cardiac, and peripheral effects of the following.
      (1) Alpha receptor stimulation
      (2) Beta receptor stimulation
   e. Name major electrolytes that affect cardiac function.
   f. Describe how electrical activity of the heart is affected by:
      (1) Sympathetic stimulation
      (2) Alpha receptors
      (3) Beta receptors
      (4) Parasympathetic stimulation

   Related Academic Topics (See Appendix A): C1, C3, C5, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6
2. Discuss assessment and history taking relative to cardiovascular complaints.
   a. Describe the common chief complaints of cardiac patients.
   b. Explain why the following occur in patients with cardiac problems:
      (1) Chest pain or discomfort
      (2) Shoulder, arm, neck, or jaw pain/discomfort
      (3) Dyspnea
      (4) Syncope
      (5) Palpitations/abnormal heart beat
   c. Select appropriate questions to be asked during history taking for each of the common chief cardiac complaints.
   d. Describe the four most pertinent aspects of the past medical history in a patient with a suspected cardiac problem.

e. Classify common prescription drugs that a patient may be taking for cardiovascular problems.
f. Describe those aspects of the physical examination that should be given special attention in the patient with suspected cardiac problems.
g. Describe the significance of the following physical exam findings in a cardiac patient:
   (1) Altered level of consciousness
   (2) Peripheral edema
   (3) Cyanosis
   (4) Poor capillary refill
   (5) Cool, clammy skin
   (6) Jugular vein distension
   (7) Pulmonary rales/wheezes
   (8) Carotid artery bruit
   (9) Pulse irregularity
h. Describe the pathophysiology of atherosclerosis.
i. List the three major modifiable risk factors for atherosclerosis.
j. Contrast the common characteristics of the pain/discomfort that occurs in angina pectoris and acute myocardial infarction.

Related Academic Topics (See Appendix A): C1, C3, C5, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

3. Describe the pathophysiology, signs and symptoms, assessment and management of certain cardiovascular conditions.
   a. Describe the pathophysiology, signs and symptoms, and prehospital management (including drug therapy) of each of the following conditions:
      (1) Angina pectoris
      (2) Right ventricular failure
      (3) Left ventricular failure/pulmonary edema
      (4) Cardiogenic shock
      (5) Abdominal aortic aneurysm
      (6) Dissecting aortic aneurysm
      (7) Acute arterial occlusion
      (8) Acute pulmonary embolism
      (9) Venous thrombophlebitis
      (10) Ruptured varicose veins
      (11) Chronic peripheral arterial insufficiency
      (12) Malignant hypotension
   b. Describe three causes of cardiac arrest other than ASHD and describe how medical management of these situations differs.
   c. Describe and contrast the etiology of cardiac arrest in infants and children from that of adult patients.
   d. Demonstrate the correct procedure for obtaining a history and performing a physical exam for cardiac-related problems.

e. Demonstrate assessment techniques and emergency management of patients.

Related Academic Topics (See Appendix A): C1, C3, C5, S8
Workplace Skills (See Appendix B): WP2, WP6

4. Discuss pharmacology pertinent to the management of cardiovascular illness.
   a. Describe the action, prehospital indications, side effects, adult and pediatric dosages, contraindications, special considerations, and precautions for each of the following drugs:
      (1) Atropine sulfate
      (2) Lidocaine hydrochloride
      (3) Bretylim tosylate
      (4) Verapamil
      (5) Epinephrine
      (6) Norepinephrine
      (7) Isoproterenol
      (8) Dopamine
      (9) Sodium bicarbonate
      (10) Calcium chloride
      (11) Oxygen
      (12) Nitrous oxide
      (13) Nitroglycerin
      (14) Morphine sulfate
      (15) Furosemide
      (16) Aminophylline
      (17) Diazepam
      (18) Adenosine
      (19) Nifedipine capsules
      (20) Procainamide
      (21) Potassium Chloride
      (22) Dobutamine
   c. Describe the action, uses, and side effects of the following drugs that are not used in the field but are commonly taken by cardiac patients:
      (1) Digitalis
      (2) Propanolol
   d. Describe the indications and complications of intra cardiac injections.
   e. Demonstrate preparation and proper administration of a prescribed dose of a cardiac drug.

Related Academic Topics (See Appendix A): C1, C3, C5, S8
Workplace Skills (See Appendix B): WP2, WP6

5. Demonstrate appropriate interpretation and management techniques to deal with a variety of potentially life-threatening cardiovascular emergencies.
   a. Define a monitoring lead and describe how it differs from a 12-lead ECG.
   b. Name eight causes of dysrhythmia.
   c. Describe the mechanisms of electrical impulses formation.

d. Describe the etiology, Lead II ECG characteristics, clinical significance, and emergency treatment of each of the following dysrhythmias.
   (1) Sinus bradycardia
   (2) Sinus tachycardia
   (3) Sinus arrhythmia
   (4) Sinus arrest
   (5) Wandering pacemaker
   (6) Premature atrial complexes
   (7) Atrial tachycardia (PSVT)
   (8) Atrial flutter
   (9) Atrial fibrillation
   (10) Premature junctional complexes
   (11) Junctional escape complexes and rhythm
   (12) Accelerated junctional rhythm
   (13) Paroxysmal junctional tachycardia (PSVT)
   (14) Ventricular escape complexes and rhythm
   (15) Premature ventricular complexes
   (16) Ventricular tachycardia
   (17) Ventricular fibrillation
   (18) Asystole
   (19) Artificial pacemaker rhythm
   (20) First degree AV block
   (21) Second degree AV block, Type I and Type II
   (22) Third degree AV block
   (23) Bundle branch block/aberrant ventricular conduction
e. Describe the indications for use of rotating tourniquets.
f. Demonstrate the proper application of rotating tourniquets.
g. Describe the indications for use of synchronized cardioversion.
h. Recognize each dysrhythmia on Lead II rhythm strips or ECG monitor.
i. Demonstrate appropriate clinical assessment and management of a cardiac patient having a dysrhythmia.
j. Demonstrate correct operation of a monitor-defibrillator to perform defibrillation on an adult and an infant.
k. Demonstrate the correct technique for performing synchronized cardioversion.
l. Demonstrate on a mannequin the proper procedure for patient assessment and performance of cartoid massage.
m. Demonstrate the correct technique for performing non-invasive (external) cardiac pacing.
n. Demonstrate correct preparation and administration of an intra cardiac injection.

o. Demonstrate proper application and operation of mechanical CPR adjunctive device.

Workplace Skills (See Appendix B): C1, C2, C4, C5, S8
Related Academic Topics (See Appendix A): WP2. WP6

Course Name: Medical Emergencies

Course Abbreviation: EMT 1436

Classification: Vocational-Technical Core

Description: This course involves the instruction of the assessment and management of various medical emergencies on the paramedic level. (6 sch: 4 hr. lecture, 4 hr. lab)

Pre/Corequisites: Prehospital Environment (EMT 1123) and Body Systems (EMT 1133)

Competencies and Suggested Objectives:

1. Integrate the pathophysiology of hyper/hypoglycemia with subsequent signs and symptoms and compensatory mechanism.
   a. Define diabetes mellitus.
   b. Discuss juvenile onset of diabetes mellitus.
   c. Discuss adult onset of diabetes mellitus.
   d. Discuss osmotic diuresis in diabetes.
   e. Discuss the mechanism of ketone body formation and ketoacidosis.
   f. Discuss kidney excretion of ketoacids and potassium.
   g. Discuss the pathophysiology of hypoglycemia, including the following:
      (1) Insulin and the relationship to serum glucose levels
      (2) Epinephrine and glycogen
   h. Discuss the precipitation of hypoglycemia.
   i. As related to hypoglycemia, list eight resulting signs/symptoms.
   j. Describe the compensating mechanism in a hypoglycemic patient.
   k. Describe the onset of hypoglycemia.
   l. Discuss the effects that low insulin levels have on the body.
   m. Discuss the effects that increased glucose levels have on the body.
   n. Discuss the pathophysiology of diabetic ketoacidosis, including the following:
      (1) Blood sugar level
      (2) Insulin level
   o. Discuss the precipitation of diabetic ketoacidosis.
   p. As related to diabetic ketoacidosis, list eight signs/symptoms.
   q. As related to the ketoacidotic patient, discuss the body's compensating mechanism.

   Related Academic Topics (See Appendix A): C1, C3, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP6

2. Discuss the management of the hyper/hypoglycemia patient and demonstrate the skills used in the management of this type of patient.
   a. Discuss the general management of the hypoglycemic patient or hyperglycemic patient who is conscious, including the following:
      (1) Airway management
      (2) Intravenous therapy
      (3) Drug therapy
      (4) Circulation
   b. Discuss the general management of the hypoglycemic patient who is unconscious, including the following:
      (1) Airway management
      (2) Intravenous therapy
      (3) Drug therapy
      (4) Circulation
   c. Discuss the general management of the ketoacidotic patient who is unconscious, including the following:
      (1) Airway management
      (2) Intravenous therapy
      (3) Drug therapy
      (4) Circulation

   Related Academic Topics (See Appendix A): C1, C3, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP6
3. Discuss the pathophysiology of the neurologically injured/ill patient with regard toward signs/symptoms and assessment tools.
   a. Describe the arterial and venous circulation to the brain.
   b. Locate the following areas of specialization in the brain for:
      (1) Speech
      (2) Vision
      (3) Personality
      (4) Balance and coordination
      (5) Sensory
      (6) Motor
   c. Identify the location of the brachial plexus and the lumbar-sacral plexus.
   d. Identify the divisions of the autonomic nervous system and describe the functions and effects of each.
   e. Identify the historical factors to be elicited when evaluating the nervous system including trauma-related and nontrauma-related problems.
   f. Identify specific observations and physical findings to be evaluated in the patient with a nervous system disorder including:
      (1) Primary survey
      (2) Vital signs
      (3) Neurologic evaluation
      (4) Head-to-toe survey
         (a) Pupils

(b) Extraocular movements
(c) Spinal evaluation

g. Describe the rating system for the Glasgow Coma Scale.

Related Academic Topics (See Appendix A): C1, C3, C6, S1, S8
Workplace Skills (See Appendix B): WP2, WP6

4. Describe the various nervous system ailments that might present a prehospital emergency and demonstrate the management techniques.
   a. Describe the pathophysiology, assessment, and management of the following:
      (1) Coma
      (2) Seizures
      (3) Status epilepticus
      (4) Stroke
      (5) Transient ischemic attacks
   b. For the following drugs, identify the pharmacology and actions, the indications, precautions, administration, and side effects, for the adult and pediatric patient:
      (1) Glucose 50%
      (2) Naloxone
      (3) Diazepam
   c. List possible causes of coma.
   d. Differentiate between syncope and seizures.
   e. Describe and differentiate between the major types of seizures.
   f. Describe the phases of a generalized seizure.
   g. Demonstrate the ability to obtain an appropriate history when evaluating patients with nervous system disorders.
   h. Demonstrate the ability to perform an appropriate assessment when evaluating patients with nervous system disorders.
   i. Demonstrate a complete neurologic examination.
   j. Demonstrate the ability to appropriately evaluate a patient utilizing the Glasgow Coma Scale.
   k. Demonstrate the ability to appropriately administer the following drugs for the adult and pediatric patient:
      (1) Dextrose 50%
      (2) Naloxone
      (3) Diazepam

   Related Academic Topics (See Appendix A): C1, C3, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6

5. Discuss anatomy and physiology of the abdomen.
   a. Describe the borders of the abdominal cavity.
   b. Name the two major blood vessels in the abdomen.
   c. List solid organs in the abdominal cavity and retroperitoneal space.

d. List hollow organs in the abdominal cavity and retroperitoneal space.

Related Academic Topics (See Appendix A): C1, C5, S1
Workplace Skills (See Appendix B): WP2

6. Explain the pathophysiology of abdominal pain, discuss related signs and symptoms, and perform an abdominal assessment and management.
   a. Discuss the following non-hemorrhagic causes of acute abdominal pain:
      (1) Local inflammation: edema, local obstruction
      (2) Peritoneal inflammation: edema, pain secondary to edema
      (3) General inflammation: edema, significant fluid loss
   b. List disease processes as related to non-hemorrhagic abdominal pain.
   c. Define the following:
      (1) Hematemesis
      (2) Melena
   d. List hemorrhagic causes of acute abdominal pain.
   e. Discuss the specific questions that should be asked to obtain a history in a patient with abdominal pain.
   f. Discuss signs and symptoms of:
      (1) Local inflammation
      (2) Peritoneal inflammation
      (3) General inflammation
   g. Describe signs and symptoms of:
      (1) Upper gastrointestinal bleeding
      (2) Lower gastrointestinal bleeding
   h. Discuss management of the patient with acute abdominal pain.
   i. Demonstrate the ability to take a relevant history from the patient with an acute abdomen.
   j. Demonstrate the ability to perform a complete physical assessment on the patient with an acute abdomen.
   k. Demonstrate competency in effectively treating the patient with a specific acute abdominal emergency (including drug therapy).

Related Academic Topics (See Appendix A): C1, C4, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

7. Discuss anatomy and physiology of genitourinary system and the pathophysiology of common geniturourinary disorders that might present as an emergency.
   a. Discuss general causes of genitourinary disorders.
   b. Discuss pathophysiology, including causes and complications of:
      (1) Acute renal failure
      (2) Chronic renal failure
      (3) Kidney stones
      (4) Urinary tract infection
   c. Discuss pathophysiology of urinary assessment, including signs and symptoms of renal failure.

d. Define the following:
   (1) Testes
   (2) Prostate
   (3) Penile urethra
   (4) Epididymis
   (5) Vas deferens
e. Describe management of the patient with a urinary tract infection.
f. Discuss signs and symptoms of:
   (1) Epididymitis
   (2) Torsion of testes
g. Discuss the assessment and management of the male patient.
h. Demonstrate the ability to take a relevant history from the patient with a genitourinary disorder.
i. Demonstrate the ability to perform a complete physical assessment on the patient with a genitourinary disorder.
j. Demonstrate competency in effectively treating the patient with specific genitourinary disorders (including drug therapy).

Related Academic Topics (See Appendix A): C1, C3, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

8. Describe the assessment and management techniques used in genitourinary disorders.
   a. Discuss assessment, including signs and symptoms, related to a urinary tract infection.
   b. Describe management of the patient with a kidney stone.
   c. Discuss assessment, including signs and symptoms, of a kidney stone.
   d. Describe management of renal failure.
   e. Discuss the assessment and management of the male patient.
   f. Demonstrate the ability to take a relevant history from the patient with a genitourinary disorder.
   g. Demonstrate the ability to perform a complete physical assessment on the patient with a genitourinary disorder.
   h. Demonstrate competency in effectively treating the patient with specific genitourinary disorders (including drug therapy).

   Related Academic Topics (See Appendix A): C1, C3, C5, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6

9. Explain the complications, assessment, management, and types of dialysis.
   a. Discuss types of dialysis.
   b. Discuss complications related to dialysis.
   c. Discuss the assessment and management of the dialysis patient.
   d. Demonstrate the ability to take a relevant history from the patient with dialysis related disorders.
   e. Demonstrate the ability to perform a complete physical assessment on the patient with dialysis related disorders.

f. Demonstrate competency in effectively treating the patient with specific dialysis related disorders (including drug therapy).

Related Academic Topics (See Appendix A): C1, C3, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

10. Summarize the pathophysiology, signs and symptoms, effects, assessment, and management of anaphylaxis.
    a. Discuss antigens, including:
        (1) Definition
        (2) Examples
        (3) Four ways antigens are introduced
    b. Define antibody and discuss production.
    c. Define anaphylaxis.
    d. Describe the pathophysiology of anaphylaxis.
    e. Discuss effects that anaphylaxis may have on the following body systems:
        (1) Respiratory
        (2) Cardiovascular
        (3) Gastrointestinal tract
        (4) Central nervous
        (5) Skin
    f. In a patient with anaphylaxis, identify signs and symptoms as related to:
        (1) Respiratory system
        (2) Cardiovascular system
        (3) Gastrointestinal system
        (4) Nervous system
        (5) Skin
    g. Describe the assessment and management of anaphylaxis.
    h. Describe the pharmacology/actions, indications, precautions, administration (adult and pediatric) side effects/special notes for the following drugs:
        (1) Oxygen
        (2) Epinephrine: 1:1000; 1:10,000
        (3) Diphenhydramine (Benedryl)
        (4) Aminophylline
    i. Demonstrate the ability to take a relevant history from the patient with anaphylaxis
    j. Demonstrate competency in effective assessment and management of the patient with anaphylaxis, including drug therapy.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

11. Explain the pathophysiology, signs and symptoms, assessment, and management of selected toxins/poisons.
    a. Discuss the relative importance of toxicologic emergencies in prehospital care.

b. Describe the routes of entry of toxic substances into the body.
c. Discuss the role of Poison Control Centers in the EMS system and in the management of patients with toxicological emergencies.
d. Describe the aspects of the patient's history that are relevant in the management of a patient with ingested poison.
e. Describe the general principles of management of a patient with ingested poison.
f. Discuss the factors affecting the decision to induce vomiting in a patient with ingested poison.
g. Describe the signs, symptoms, and management of the following specific cases of ingested poisons:
   (1) Strong acids or alkalies
   (2) Hydrocarbon products
   (3) Methyl alcohol or ethylene glycol
   (4) Cyanide
   (5) Food poisoning
   (6) Poisonous plants
h. Describe the general principles of management of a patient with inhaled poison.
i. Describe the signs, symptoms, and management of the following specific cases of inhaled poisons:
   (1) Carbon monoxide
   (2) Freon
   (3) Ammonia
   (4) Chlorinated hydrocarbons
   (5) Methyl chloride
j. Describe the general principles of management of a patient with injected poison.
k. Describe the signs, symptoms, and management of the following specific cases of injected poison:
   (1) Bees, hornets, wasps, or yellow jackets
   (2) Brown recluse spider
   (3) Black widow spider
   (4) Scorpion
   (5) Rattlesnake, copperhead, or cotton-mouth water moccasin
   (6) Coral snake
   (7) Marine animals
l. Describe the general principles of management of a patient with a surface-absorbed poison.
m. Describe the signs, symptoms, and management of the following specific cases of surface-absorbed poison:
   (1) Organophosphate chemicals
   (2) Cyanide
n. Demonstrate the application of a constricting band.

o. Demonstrate the procedures for incising a snake bite wound.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

12. Differentiate the signs and symptoms of selected types of drug intoxication and include appropriate assessment and management for each.
    a. Describe the general principles of management of a patient with an overdose.
    b. Describe the signs, symptoms, and management of the following specific cases of overdose:
        (1) Narcotics
        (2) Sedatives/depressants
        (3) Aspirin
        (4) Acetaminophen
    c. Discuss the incidence of drug abuse in the U.S.
    d. Define the following terms:
        (1) Substance or drug abuse
        (2) Substance or drug dependence
        (3) Tolerance
        (4) Withdrawal
        (5) Addiction
    e. List the most commonly abused drugs (both by chemical name and "street name") and describe their physiological and psychological effects.
    f. Describe the management of emergencies stemming from the use of the following:
        (1) Hallucinogens (LSD, mescaline, DMT, psilocybin)
        (2) Phencyclidine (PCP)
        (3) Cocaine
        (4) Cannabis (marijuana)
        (5) Amphetamine
    g. Discuss the incidence of alcoholism in the U.S.
    h. Discuss the signs, symptoms, and management of acute alcohol overdose.
    i. Discuss the signs and symptoms of chronic alcohol use.
    j. Discuss the signs, symptoms, and management of alcoholic withdrawal (delirium tremens or "DTs").
    k. Characterize viruses, bacteria, and fungi.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, S8
Workplace Skills (See Appendix B): WP2, WP6

13. Demonstrate knowledge of the body's immune and lymphatic systems to include the significance of selected cell types and fluids.
    a. Briefly discuss the body's immune system.
    b. Differentiate between antigen and antibody.
    c. Define antigenic determinants.
    d. Define clone cells.

e. Define leukocyte.
f. Discuss the major components of the immune system.
g. Define lymph.
h. Define interstitial fluid.
i. Discuss composition of lymph and interstitial fluid.
j. Discuss the lymphatic system.
k. Discuss lymph circulation.
l. Discuss the function of:
   (1) Lymph
   (2) Antibody
   (3) Thymus
   (4) Spleen
m. Discuss the formation and types of lymphocytes.
n. Discuss the development, activation, and function of B cells.
o. Discuss the development, activation, and function of T cells.
p. Identify and discuss the location of lymphocytes.
q. Describe the structure and types of antibodies.
r. Discuss agammaglobulinemia.
s. Define autoimmune diseases.

Related Academic Topics (See Appendix A): C1, S1
Workplace Skills (See Appendix B): WP2

14. Differentiate the signs and symptoms of selected communicable/infectious diseases to include appropriate assessment and management for each.
   a. Define infectious disease and the general cause.
   b. List three examples of infectious diseases and the general cause.
   c. Discuss how infectious diseases are transmitted.
   d. Define communicable disease.
   e. Give an example of a highly communicable disease caused by a virus.
   f. Give an example of a communicable disease caused by bacteria.
   g. Give an example of a communicable disease caused by fungi.
   h. Discuss how stress may be related and may affect disease. Refer also to anatomy and physiology of specific body systems which are affected by specific diseases.
   i. Identify the pertinent history-related questions to be asked when evaluating the patient with an infectious disease.
   j. Identify signs and symptoms to be evaluated in a patient with an infectious disease, including:
      (1) Primary survey, including level of consciousness
      (2) Vital signs
      (3) Secondary survey (head-to-toe survey)
      (4) Neurological evaluation
   k. Define tuberculosis.

l. Discuss the pathophysiology of tuberculosis, including:
   a. Acute generalized form
   b. Chronic localized form
m. Discuss the body systems commonly affected by tuberculosis.
n. Discuss signs and symptoms related to the patient with tuberculosis.
o. Discuss assessment and management of the patient with tuberculosis.
p. Discuss EMT safety as related to handling the patient with tuberculosis.
q. Define hepatitis.
r. Discuss the pathophysiology of hepatitis.
s. Discuss the body systems commonly affected by hepatitis.
t. Discuss symptoms related to the patient with:
   (1) Hepatitis acute anicteric
   (2) Hepatitis cholangiolitic
   (3) Hepatitis fulminant
   (4) Infectious hepatitis (include how transmitted)
   (5) Serum hepatitis (include how transmitted)
   (6) Toxic hepatitis
   (7) Viral hepatitis
      (a) Type A
      (b) Type B
u. Discuss assessment and management of the patient with hepatitis.
v. Discuss EMT safety as related to handling the patient with hepatitis.
w. Define meningitis.
x. Discuss the causes of meningitis.
y. Discuss the pathophysiology of meningitis.
z. Discuss the body systems commonly affected by meningitis.
aa. Discuss signs and symptoms related to the patient with meningitis.
bb. Briefly discuss the following:
   (1) Acute meningitis
   (2) Cerebral meningitis
   (3) Cerebrospinal meningitis
   (4) Pneumococcal meningitis
   (5) Spinal meningitis
   (6) Traumatic meningitis
   (7) Tuberculous meningitis
cc. Discuss assessment and management of the patient with meningitis.
dd. Discuss EMT safety as related to handling the patient with meningitis.
ee. Define syphilis.
ff. Discuss the types of syphilis.
gg. Discuss the pathophysiology of syphilis.
hh. Discuss the body systems commonly affected by syphilis.
ii. Discuss the signs and symptoms related to the patient with syphilis.
jj. Define gonorrhea.
kk. Discuss the pathophysiology of gonorrhea.

ll. Discuss the body systems commonly affected by gonorrhea.
mm. Discuss the signs and symptoms related to the patient with gonorrhea.
nn. List two types of herpes simplex.
oo. Discuss the pathophysiology of herpes simplex type 2.
pp. Discuss the body systems commonly affected and incubation period of herpes simplex type 2.
qq. Discuss the signs and symptoms related to the patient with herpes simplex type 2.
rr. Define Acquired Immune Deficiency Syndrome (AIDS).
ss. Discuss the pathophysiology of AIDS.
tt. Discuss the body systems commonly affected and incubation period of AIDS.
uu. Discuss the signs and symptoms related to the patient with AIDS.
vv. Discuss assessment and management of the patient with a sexually transmitted disease.
ww. Discuss EMT safety as related to handling the patient with a sexually transmitted disease.
xx. Define measles.
yy. Discuss the pathophysiology of measles.
zz. Discuss the signs and symptoms related to the patient with measles.
aaa. Define mumps.
bbb. Discuss the pathophysiology of mumps.
ccc. Discuss the signs and symptoms related to the patient with mumps.
ddd. Define chicken pox.
eee. Discuss the pathophysiology of chicken pox.
fff. Discuss the signs and symptoms related to the patient with chicken pox.
ggg. Discuss the assessment and management of the patient with a childhood disease.

Related Academic Topics (See Appendix A): C1, C2, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3

15. Formulate an algorithm for the identification and management of parasites.
    a. Define and discuss the pathophysiology of scabies.
    b. Define and discuss the pathophysiology of lice.
    c. Discuss the body systems commonly affected by scabies/lice.
    d. Discuss the signs and symptoms related to the patient with scabies/lice.
    e. Discuss assessment and management of the patient with scabies/lice.

    Related Academic Topics (See Appendix A): C1, C3, S8
    Workplace Skills (See Appendix B): WP2, WP3
16. Discuss and demonstrate protective procedures for manipulation and decontamination of infectious agents.
    a. Discuss EMT safety as related to handling the patient with scabies/lice.
    b. Discuss EMT safety as related to handling the patient with a childhood disease.

c. Discuss follow-up after exposure, including the following:
   (1) Notification procedures by hospital
   (2) Notification procedures by EMT
d. Discuss EMT personal hygiene.
e. Discuss vehicle cleaning procedures.
f. Demonstrate the ability to take a history from the patient with an infectious disease.
g. Demonstrate the ability to perform a complete physical assessment on the patient with an infectious disease.

Related Academic Topics (See Appendix A): C1, C3, C5, S8
Workplace Skills (See Appendix B): WP2, WP3

17. Differentiate the thermoregulatory mechanisms and compensatory mechanisms.
    a. Define steady-state metabolism and identify the oral and rectal temperatures associated with a metabolic steady state.
    b. List the two terms associated with bodily temperature extremes.
    c. List and define the function of two structures in the body's primary thermoregulatory mechanism.
    d. List two mechanisms of thermal generation within the body and the basic mechanism associated with each.
    e. Describe the body's compensatory mechanism for excess thermal gain.
    f. Describe four ways in which the body dissipates heat into the external environment.
    g. Describe the body's compensatory mechanism for excess thermal loss.

    Related Academic Topics (See Appendix A): C1, S1, S8
    Workplace Skills (See Appendix B): WP2

18. Explain the heat related disorders, preventive measures, and the appropriate management of each.
    a. State three common forms of heat disorder.
    b. Define the role of sodium in heat cramps.
    c. List the signs and symptoms associated with heat cramps.
    d. Describe the treatment of heat cramps.
    e. Define the role of sodium in heat exhaustion.
    f. List the signs and symptoms associated with heat exhaustion.
    g. Describe the treatment of heat exhaustion.
    h. List two environmental factors associated with heat stroke.
    i. Describe the role of the body's primary thermoregulatory mechanism in heat stroke.
    j. State the critical upper range temperature at which cellular deterioration begins.
    k. Differentiate the following parameters among heat cramps, heat exhaustion, and heat stroke:
       (1) Pathophysiology
       (2) Cramping

(3) Mental status
(4) Skin condition
(5) Internal temperature
(6) Pulse
(7) Blood pressure

l. State the treatment modality that is common to heat cramps, heat exhaustion, and heat stroke besides the ABC's of basic life support.
m. List predisposing factors and preventive measures associated with heat disorders.
n. Define fever (pyrexia) and identify the pathophysiological mechanisms causing the disorder.
o. Define hyperpyrexia and identify pathophysiological mechanisms.
p. State the field treatment of pyrexia.

Related Academic Topics (See Appendix A): C1, C3, C4, S8
Workplace Skills (See Appendix B): WP2, WP3

19. Explain the hypothermic disorders, preventive measures, and the appropriate management of each.
    a. State the causative factor associated with acute systemic hypothermia.
    b. State the temperature range, signs, and symptoms associated with mild systemic hypothermia.
    c. State the temperature range, signs, and symptoms associated with severe systemic hypothermia.
    d. Describe the metabolic responses to both mild and severe systemic hypothermia and the implications of these responses to pharmacotherapy and defibrillation.
    e. Discuss the treatment of hypothermia.
    f. State conditions under which rewarming should be initiated in the field.
    g. Define "afterdrop phenomenon" and its prognostic implications.
    h. List two metabolic factors that may be associated with chronic hypothermia.
    i. List individuals who are at greatest risk for hypothermia.
    j. Differentiate between frostnip, superficial frostbite, and deep frostbite.
    k. State the steps in the field management of frostbite.
    l. State the immersion rewarming temperature for frostbitten extremities and the rationale for this temperature.

    Related Academic Topics (See Appendix A): C1, C3, S8
    Workplace Skills (See Appendix B): WP2, WP6

20. Integrate the current statistics available concerning near-drowning episodes and current management algorithm.
    a. State the importance of near-drowning as a leading cause of accidental death in the U.S.
    b. Describe the usual physiologic sequence of events in a near-drowning episode.

c. Describe the pulmonary and systemic pathophysiology in near-drowning patients.
d. State the factors affecting survival times and probability of successful resuscitation in near-drowning patients.
e. Describe the management of the near-drowning patient.

Related Academic Topics (See Appendix A): C1, C3, S8
Workplace Skills (See Appendix B): WP2

21. Generate a management approach to the victim of radiation exposure to include medic protection.
    a. Identify the common types and sources of ionizing radiation.
    b. Identify sources of normal background radiation.
    c. Describe the pathophysiology of ionizing radiation received over acute and/or chronic exposure.
    d. Describe the signs, symptoms, and management of the radiated patient.
    e. Describe the relative risks to the paramedic in handling the radiated patient.

    Related Academic Topics (See Appendix A): C1, C3, C4, S8
    Workplace Skills (See Appendix B): WP2
22. Distinguish between normal breathing and breathing gas under pressure and include diving disorders, signs, symptoms, and management.
    a. Describe the anatomy and physiology of breathing gas under pressure.
    b. List the common medical problems associated with diving accidents.
    c. Describe the various major physiologic factors which may predispose a diver to decompression sickness.
    d. Describe the pathophysiology of decompression sickness.
    e. Describe the signs, symptoms, and management of decompression sickness.
    f. Describe the pathophysiology of pulmonary overpressure accidents.
    g. Describe the signs, symptoms, and management of pneumomediastinum.
    h. Describe the signs, symptoms, and management of subcutaneous emphysema.
    i. Describe the signs, symptoms, and management of air embolism.

    Related Academic Topics (See Appendix A): C1, C3, C5, S1, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6

Course Name: General Pharmacology

Course Abbreviation: EMT 1512

Classification: Vocational-Technical Core

Description: This course provides instruction in calculation, administration, conversion of specific pharmacologic agents used in prehospital care. (2 sch: 2 hr. lecture)

Pre/Corequisites: Internship for Clinical and Field Experience I (EMT 1713)

Competencies and Suggested Objectives:

1. Explain the principles of pharmacology including the terminology, drug dosages, actions, and interactions.
   a. Define the following terms:
      (1) Depression
      (2) Physiological
      (3) Therapeutic
      (4) Untoward
      (5) Initiation
      (6) Antagonism
      (7) Idiosyncrasy
      (8) Indication
      (9) Side Effect
      (10) Cumulative effect
      (11) Tolerance
      (12) Synergism
      (13) Potentiation
      (14) Additive
      (15) Habituation
      (16) Hypersensitivity
      (17) Contraindication
   b. Select the term that best describes an indication or action of a specific drug.
   c. Identify and discuss the following nine items as they relate to the administration of any drug:
      (1) Dose
      (2) Dilution
      (3) Action
      (4) Contraindications
      (5) Antidotes
      (6) Indications and Use

(7) Precautions
(8) Incompatibility
(9) Side effects

d. Name and differentiate the sources of various drugs.
e. Name and contrast the various names of a drug (i.e., generic vs. trade name vs. official vs. chemical).
f. State why drug standards are necessary.
g. Identify those agencies that are responsible for regulating drugs and provide examples.
h. Define the following terms:
(1) Capsules
(2) Fluid extracts
(3) Suppositories
(4) Pills
(5) Spirits
(6) Lozenges
(7) Ampules
(8) Vials
(9) Powders
(10) Tinctures
(11) Ointments
(12) Tablets
(13) Suspensions
(14) Solutions
i. Identify those pharmaceutical preparations used internally.
j. Identify and state the given dosage of prepackaged pharmaceutical preparations.
k. State the purpose and use(s) of the Physician's Desk Reference (PDR).
l. Identify local and general or systemic effects of drugs.
m. List and compare the following factors on the action of drugs:
(1) Age of patient
(2) Condition of patient
(3) Dosage
(4) Absorption rate
(5) Distribution
(6) Elimination (excretion)
n. Rank the five methods of absorption from fastest to slowest.
o. Name the five routes in which drugs are absorbed.

Related Academic Topics (See Appendix A): C1, C3, C6, M4, S8
Workplace Skills (See Appendix B): WP2

2. Calculate drug dosages.
a. List the two systems of weights and measures being used today.
b. Determine which weights and measures belong to the apothecary system and which to the metric system.

c. State three advantages of the metric system.
d. Demonstrate the conversion of various measures from milligrams to grams.
e. Given a drug dose in milligrams and its specific concentration in tablet form, calculate how many tablets should be given to a patient.
f. Demonstrate the conversion of various measures from milliliters to liters.
g. Given a desired dose and concentration of a drug, calculate the volume of a drug to be administered.
h. Demonstrate the conversion of various measures from pounds to kilograms.
i. Given the weight of a patient in pounds and a drug dose in milligrams per kilogram, calculate the appropriate drug dosage for the patient.
j. State the number of macro and micro drops/cc.
k. State the formula used to determine the flow rate.
l. Given a rate of infusion for an intravenous (IV) fluid, determine the number of micro and/or macro drips per minute.

Related Academic Topics (See Appendix A): C1, C3, C4, M1, M4
Workplace Skills (See Appendix B): WP2, WP6

3. Apply principles and practice of medication administration.
   a. State four routes of drug administration.
   b. Name at least eight safety considerations to remember when administering drugs.
   c. Identify and describe local guidelines for drug administration.
   d. Describe the different types and sizes of syringes and needles and the advantages and disadvantages of each.
   e. Identify four routes of parenteral drug administration.
   f. Describe the proper approach and explanation that should be given to a patient prior to the administration of a medication.
   g. State what information should be elicited from a patient prior to administration of a medication.
   h. State why ampule tops should be tapped before they are used.
   i. State why air must be taken into the syringe when drawing a solution from a vial.
   j. State why the IV tube is pinched off above the injection site when performing an IV push.
   k. State the advantages and/or disadvantages of:
      (1) IV injections
      (2) Subcutaneous injections
      (3) Intramuscular injections
      (4) Rectal insertion
      (5) Intradermal injection
      (6) Intralingual injection
      (7) P.O. (by mouth)
      (8) Intraosseus infusion

l. Describe why the skin is pinched when administering a subcutaneous injection.
m. Describe why the skin is stretched when administering an intramuscular injection.
n. Withdraw a given amount of solution, given the dose, from an ampule or vial.
o. Assemble a prepackaged syringe.
p. Perform an IV push and inject a specified dose of medication into an already established IV line.
q. Perform subcutaneous and intramuscular injections at any one of several locations.

Related Academic Topics (See Appendix A): C1, C3, C4
Workplace Skills (See Appendix B): WP2

4. Explain the use of medications used in prehospital care.
   a. List the indications, contraindications, actions, dosage, and route of administration of each of the following drugs:
      (1) Epinephrine
      (2) Sodium bicarbonate
      (3) Atropine
      (4) Calcium chloride
      (5) Lidocaine
      (6) Bretylium
      (7) Isoproterenol
      (8) Morphine
      (9) Demerol
      (10) Vasopressors (Levophed or Dopamine)
      (11) Furosemide
      (12) Nalaxone
      (13) Nitroglycerine (spray or tablet)
      (14) Diazepam (Valium)
      (15) Oxytocin
      (16) Aminophyllin
      (17) Bronchodilators
      (18) Dextrose 50%
      (19) Dexamethsone
      (20) Syrup of ipecac
      (21) Activated charcoal
      (22) Thiamine
      (23) Potassium chloride
      (24) Vitamins
      (25) Heparin
      (26) Glucagon
      (27) Magnesium sulfate
      (28) Mannitol

(29) Nifedipine capsules
(30) Procainamide
(31) Verapamil
(32) Dobutamine
(33) Antiemetics
(34) Versed
(35) Ativan
(36) Pavulon
(37) Anectine
(38) TPA

Related Academic Topics (See Appendix A): C1
Workplace Skills (See Appendix B): WP2, WP6

Course Name: Internship for Clinical and Field Experience II

Course Abbreviation: EMT 1724

Classification: Vocational-Technical Core

Description: This course provides clinical training on the skills and knowledge obtained in the classroom. These will be supervised activities carried out in the clinical and field setting at approved sites. (4 sch: 12 hr. clinical)

Pre/Corequisites: Internship for Clinical and Field Experience I (EMT 1713) and second semester EMT-P courses

Competencies and Suggested Objectives:

1. Perform EMT Intermediate and EMT-Paramedic activities.
   a. Measure, interpret, and record vital signs.
   b. Perform patient assessment.
   c. Perform spinal immobilization.
   d. Utilize infection control techniques.
   e. Perform splinting.
   f. Perform MAST application.
   g. Perform airway placement.
   h. Perform suctioning.
   i. Perform esophageal airway.
   j. Implement intravenous therapy.
   k. Perform defibrillation.
   l. Perform patient handling/lifting.
   m. Perform hemorrhage control.
   n. Perform oxygen administration.
   o. Perform documentation.
   p. Transmit radio report.
   q. Perform CPR.
   r. Perform medication administration (all methods).
   s. Perform advanced airway/breathing techniques.
   t. Perform glucose monitoring.
   u. Perform transcutaneous pacing.
   v. Practice arrhythmia recognition.

   Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6

Course Name: Obstetrical, Gynecological, and Neonatal Emergencies

Course Abbreviation: EMT 1612

Classification: Vocational-Technical Core

Description: This course will provide instruction on the handling of emergency childbirth, complications, and neonatal management. (2 sch· 2 hr. lecture)

Pre/Corequisites: Internship for Clinical and Field Experience II (EMT 1724)

Competencies and Suggested Objectives:

1. Differentiate the various aspects of prehospital assessment and management of the gynecological patient.
   a. Identify specific details of history that should be obtained from the gynecologic patient.
   b. Identify specific physical findings that should be assessed in the gynecologic patient.
   c. List the side effects of commonly used contraceptives.
   d. Demonstrate the ability to properly assess the patient with a possible gynecological disorder.
   e. Describe the typical signs, symptoms, and management of pelvic inflammatory disease.
   f. Identify sources of non-traumatic abdominal pain.
   g. Identify potential sources of trauma to the external genitalia and management of injuries.
   h. Discuss the assessment of a sexual assault victim and identify the ways in which it differs from usual assessment.
   i. Identify principles of management for the sexual assault victim.

   Related Academic Topics (See Appendix A): C3, C4, C5, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6
2. Describe the normal reproductive cycle.
   a. Describe the normal menstrual cycle.
   b. List early signs and symptoms of pregnancy.
   c. Identify the normal site of the following:
      (1) Ovum fertilization
      (2) Ovum implantation
   d. Identify and describe the functions of the following:
      (1) Placenta
      (2) Umbilical cord
      (3) Amniotic sac and fluid
   e. Describe fetal development and circulation.

f. Define the following terms:
   (1) Antepartum
   (2) Postpartum
   (3) Natal
   (4) Prenatal
   (5) Primigravida
   (6) Primipara
   (7) Multigravida
   (8) Multipara

Related Academic Topics (See Appendix A): C1, S8
Workplace Skills (See Appendix B): WP2

3. Identify and demonstrate an appropriate assessment of the obstetric patient.
   a. Identify specific details of history that should be obtained from the obstetric patient.
   b. Identify specific physical findings that should be assessed in the obstetric patient.
   c. Demonstrate the ability to properly assess the pregnant patient.
   d. Demonstrate the ability to obtain an appropriate history when evaluating the patient with an obstetric chief complaint.
   e. Demonstrate the ability to perform an appropriate assessment when evaluating an obstetric patient.

Related Academic Topics (See Appendix A): C3, C4, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3

4. Describe the pathophysiology, assessment, and management of obstetrical complications.
   a. Discuss the possible effects of trauma on both mother and fetus.
   b. Discuss the effect of pregnancy on the following pre-existing diseases:
      (1) Diabetes
      (2) Essential hypertension
      (3) Neuromuscular disorders
      (4) Cardiac disorders
   c. Define the following terms:
      (1) Spontaneous abortion
      (2) Criminal abortion
      (3) Therapeutic abortion
   d. Describe the pathophysiology, assessment, and management of the patient who has had, or is having, an abortion.
   e. Describe the pathophysiology, assessment, and management of the following:
      (1) Ectopic pregnancy
      (2) Abruptio placenta
      (3) Placenta previa
   f. Describe Braxton-Hicks contractions and their significance.

g. Describe the pathophysiology, assessment, and management of eclampsia and preeclampsia.
h. Describe the signs, symptoms, and management of supine hypotensive syndrome.

Related Academic Topics (See Appendix A): C3, C4, S1, S8
Workplace Skills (See Appendix B): WP2, WP3

5. Identify physical and psychological changes and management of these changes which occur during labor, delivery, and postpartum.
   a. Define the stages of labor and the length of each.
   b. Describe the progression of labor.
   c. Define the following terms:
      (1) Effacement
      (2) Cervical dilation
      (3) Crowning
      (4) Presenting part
   d. Discuss factors that influence transport decisions for the patient in labor.
   e. List and describe steps for a normal delivery.
   f. Demonstrate the ability to use bulb syringe suction and DeLee suction.
   g. Demonstrate the ability to clamp and cut an umbilical cord.
   h. Describe the management during delivery when the cord is wrapped around the baby's neck.
   i. Describe the pathophysiology, assessment, and management of cephalopelvic disproportion (CPD).
   j. List factors that may cause a large fetus.
   k. List and describe five abnormal positions or presentations of the fetus during delivery and the general management principles.
   l. Describe the pathology and management of a prolapsed umbilical cord.
   m. Describe the management of the multiple birth delivery.
   n. Describe the occurrence, complications, and management of a precipitate labor.
   o. Describe the pathophysiology, assessment, and management of postpartum hemorrhage.
   p. Discuss the indications for and technique of fundal massage.
   q. Demonstrate the technique of fundal massage.
   r. Describe the pharmacology and actions, indications, precautions, administration, and side effects of oxytocin.
   s. Demonstrate the ability to appropriately administer oxytocin.
   t. Describe the pathophysiology, assessment, and management of uterine rupture.
   u. Identify the pathophysiology, assessment, and management of uterine inversion.

v. Identify the pathophysiology, assessment, and management of pulmonary embolism during the antepartum or postpartum period.

Related Academic Topics (See Appendix A): C1, C3, C4, S1, S8
Workplace Skills (See Appendix B): WP2, WP3

6. Identify care and management of the neonate.
   a. Describe the routine care of the newborn.
   b. Identify the significance of meconium staining.
   c. Identify the major problems that occur during transport of the neonate.
   d. List four means by which heat loss occurs in infants.
   e. Describe methods of heat conservation in the newborn.
   f. Discuss the effects of hypothermia on the newborn infant.
   g. Identify heat sources that may and may not be utilized to warm the neonate.
   h. Define the parameters of Apgar scoring and demonstrate the ability to calculate an accurate Apgar score.
   i. Describe two methods of stimulating the distressed infant.
   j. Describe the appropriate administration of oxygen to the newborn.
   k. Describe methods of ventilatory assistance for the newborn infant.
   l. Describe resuscitation for the distressed infant.
   m. Identify the rate of ventilation to be used in the non-breathing newborn.
   n. Describe the technique for cardiac compressions on the newborn.
   o. Demonstrate the ability to appropriately manage a newborn infant.

Related Academic Topics (See Appendix A): C3, C4, S8
Workplace Skills (See Appendix B): WP2, WP3

Course Name: Pediatrics

Course Abbreviation: EMT 1621

Classification: Vocational-Technical Core

Description: This course will provide instruction on the special problems and considerations in the management of pediatric patients. (1 sch: 1 hr. lecture)

Pre/Corequisites: Internship for Clinical and Field Experience II (EMT 1724)

Competencies and Suggested Objectives:

1. Distinguish various aspects of normal growth and development including vital signs and the general approach to care.
   a. Define the terms growth and development.
   b. Identify the general goals of management of the pediatric patient.
   c. Discuss the sources of historical information in the pediatric patient.
   d. List the principles in the general approach to the pediatric patient.
   e. Identify normal age-related vital signs in the pediatric patient.
   f. Describe the normal and abnormal appearance of the anterior fontanelle in the infant.
   g. For each of the following age groups identify the relevant aspects of normal growth and development, personality development, relationship to parents, history factors, common illnesses and accidents, and approach:
      (1) Neonate
      (2) 1 to 6 months
      (3) 6 to 12 months
      (4) 12 to 36 months
      (5) 3 to 6 years
      (6) 6 to 12 years
      (7) 12 to 15 years
   h. Demonstrate the ability to assess vital signs in the pediatric patient utilizing the appropriate equipment.
   i. Demonstrate the ability to obtain an appropriate history when evaluating the pediatric patient.
   j. Demonstrate the ability to perform an appropriate assessment when evaluating the pediatric patient.

   Related Academic Topics (See Appendix A): C1, C3, C4, S1, S3
   Workplace Skills (See Appendix B): WP2, WP3, WP6
2. Describe the pathophysiology, assessment, and management of selected common pediatric problems.
   a. Define Sudden Infant Death Syndrome (SIDS).
   b. Describe the incidence of SIDS.

c. Discuss the current theories on SIDS.
d. Describe the assessment and management of SIDS cases.
e. Identify the immediate needs of the SIDS family.
f. Describe characteristics of the child abuser.
g. Describe the characteristics of the abused child.
h. Discuss the assessment of the potentially abused child including important historical information.
i. Describe the management of the victim and family in the child abuse situation.
j. Discuss legal requirements of health professionals to report suspected child abuse.
k. Describe the pathophysiology, assessment, and management of pediatric seizures.
l. Describe the pathophysiology, assessment, and management of dehydration in the pediatric patient.
m. Describe the pathophysiology, assessment, and management of the child with suspected meningitis.
n. Describe the pathophysiology, assessment, and management of the child with suspected septicemia.
o. Describe the pathophysiology, assessment, and management of the child with suspected Reyes Syndrome.
p. Discuss the pathophysiology, assessment, and management of the following respiratory disorders:
   (1) Bronchiolitis
   (2) Croup
   (3) Epiglottitis

Related Academic Topics (See Appendix A): C2, C4, C5, S1, S8
Workplace Skills (See Appendix B): WP2, WP3, WP6

3. Demonstrate the performance of advanced life support procedures for the pediatric patient to include pharmacological interventions.
   a. Using AHA ACLS standards, identify the correct pediatric dosage of the following:
      (1) Atropine sulfate
      (2) Calcium chloride
      (3) Dopamine
      (4) Epinephrine
      (5) Epinephrine infusion
      (6) Furosemide
      (7) Isoproterenol
      (8) Lidocaine
      (9) Lidocaine infusion
      (10) Naloxone
      (11) Sodium bicarbonate

b. Describe the technique for endotracheal intubation in the pediatric patient.
c. Identify appropriate blade sizes and endotracheal tube sizes for the pediatric patient.
d. Describe the site selection for intravenous infusions in the pediatric patient.
e. Describe the equipment selection for intravenous therapy in the pediatric patient.
f. Demonstrate the ability to perform endotracheal intubation in the pediatric patient.
g. Demonstrate the ability to perform intravenous therapy on the pediatric patient including selection of appropriate equipment, solutions, and anatomical sites.

Related Academic Topics (See Appendix A): C3, C4, M4, S1, S6
Workplace Skills (See Appendix B): WP2, WP3, WP6

Course Name: Geriatrics

Course Abbreviation: EMT 1631

Classification: Vocational-Technical Core

Description: This course will provide instruction on the special problems and considerations in the management of geriatric patients. (1 sch: 1 hr. lecture)

Pre/Corequisites: Internship for Clinical and Field Experience II (EMT 1724)

Competencies and Suggested Objectives:

1. Generalize the knowledge of the specialized problems and considerations in managing the geriatric patient.
   a. Discuss statistics on aging, including increased life expectancy, percent of population over 65 years old, and leading causes of death in geriatric population.
   b. Discuss at least six factors which contribute to the elderly being at high risk for increased medical care.
   c. Discuss general decline in organ systems, including the following:
      (1) Respiratory system
      (2) Cardiovascular system
      (3) Renal system
      (4) Nervous system
      (5) Musculoskeletal system
      (6) Gastrointestinal system
      (7) Response to emotions/stress
   d. List at least 12 diseases/disorders common in the elderly.
   e. List four factors that complicate clinical evaluation of the geriatric patient.
   f. As related to the geriatric patient's history, discuss the following considerations:
      (1) Common complaints of the geriatric patient (not specific to any one disorder)
      (2) Four considerations which may mask the patient's ability to communicate significant signs/symptoms.
   g. As related to the physical examination of a geriatric patient, discuss the following considerations:
      (1) Fatigue
      (2) Excessive clothing
      (3) Disguised signs/symptoms

   Related Academic Topics (See Appendix A): C1, C4, S1
   Workplace Skills (See Appendix B): WP2

2. Discuss the disease processes as they relate to the geriatric patient in body systems including nervous, cardiovascular, respiratory, digestive, and genitourinary.
   a. Define syncope.
   b. Define pre-syncope.
   c. Discuss the pathophysiology of syncope.
   d. Discuss the following types of syncope:
      (1) Vasodepressor syncope
      (2) Orthostatic syncope
      (3) Cardiac syncope
   e. Define seizure and discuss the progression of events.
   f. Define vertigo and discuss the progression of events.
   g. Define dementia, distinguishing between acute and chronic dementia:
      (1) Discuss the etiologies of chronic senile dementia
      (2) Discuss the etiologies of acute organic brain syndrome
   h. Define delirium.
   i. Define Alzheimer's Disease.
   j. Discuss six signs/symptoms of Alzheimer's Disease and the progression of events.
   k. Define the following:
      (1) Stroke
      (2) TA
   l. Discuss four causes of other focal neurological deficits.
   m. List four drugs which may produce adverse reactions in the geriatric patient and that may culminate in cerebral dysfunction.
   n. Discuss the general management of neurological disorders.
   o. Discuss signs/symptoms of cardiovascular conditions, specific to the geriatric patient.
   p. Discuss syncope as related to cardiovascular conditions:
      (1) Vasodepressor
      (2) Orthostatic
      (3) Vasovagal
      (4) Cardiac
   q. Discuss congestive heart failure as related to the elderly.
   r. List two causes of dysrhythmia in the elderly.
   s. Discuss the following as related to the geriatric patient:
      (1) Aortic dissection
      (2) Abdominal aortic aneurysm
      (3) Peripheral arterial and venous conditions
      (4) General management
   t. List four conditions which may cause the physician to alter cardiac drug therapy for a geriatric patient.
   u. Discuss precautions as related to administration of fluids in a geriatric patient.

v. As related to the elderly patient, list six conditions that may be associated with respiratory distress.
w. Discuss findings which may be specific to the geriatric patient suffering from pulmonary embolism.
x. Discuss findings that may be specific to the geriatric patient suffering from respiratory tract infection.
y. Discuss chronic bronchitis with reference to the geriatric.
z. Discuss management of respiratory distress.
aa. Discuss GI bleed as related to geriatric patients.
bb. Discuss two causes of upper intestinal hemorrhage.
cc. Discuss four causes of massive lower intestinal hemorrhage.
dd. Discuss six significant signs of blood loss.
ee. Discuss cholecystitis/biliary disease as related to the elderly patient.
ff. Discuss small bowel obstruction and two causes.
gg. Discuss large bowel obstruction, including the following:
    (1) Main cause
    (2) Main signs/symptoms
hh. Discuss diverticulitis, including signs/symptoms.
ii. Discuss appendicitis, including the following:
    (1) Signs/symptoms
    (2) Complications
jj. Discuss pancreatitis, including common cause and symptoms.
kk. Discuss peptic ulcer disease/perforation, including:
    (1) Common cause
    (2) Signs/symptoms
ll. As related to the elderly, list related signs and symptoms associated with gastrointestinal disorders.
mm. Discuss the general management of critical GI bleed in the elderly.

Related Academic Topics (See Appendix A): C1, C3, S1, S8
Workplace Skills (See Appendix B): WP2, WP3

3. Discuss the pathophysiology and management of carcinoma in the geriatric patient.
    a. Discuss the pathophysiology of carcinoma, in general.
    b. List four kinds of cancer directly attributable to high mortality rate.
    c. List six signs/symptoms of carcinoma.
    d. Discuss general management of the cancer patient.

    Related Academic Topics (See Appendix A): C4, S1, S8
    Workplace Skills (See Appendix B): WP2, WP3
4. Describe the various effects of environmental emergencies and management as related to the geriatric patient.
    a. Discuss tolerance of temperatures.
    b. Discuss six predisposing factors for hypothermia common in geriatric patients.

c. Discuss three predisposing factors for hyperthermia common in geriatric patients.
d. Discuss general management of environmental emergencies.

Related Academic Topics (See Appendix A): C1, C4, S8
Workplace Skills (See Appendix B): WP2

5. Discuss trauma management and considerations dealing with the geriatric patient.
   a. List at least six reasons that the elderly are more prone to falls.
   b. List three reasons that the elderly are more prone to head injuries.
   c. List three reasons that the elderly are more prone to cervical spine injuries.
   d. Prehospital priorities of care for trauma in the elderly are similar to those for all trauma patients; list two considerations.
   e. Discuss trauma management considerations in the elderly for the following systems:
      (1) Cardiovascular system
      (2) Respiratory system
      (3) Renal system
   f. Discuss positioning, immobilization, and packaging of the elderly trauma patient (with consideration of physical deformities).

   Related Academic Topics (See Appendix A): C1, C4, S8
   Workplace Skills (See Appendix B): WP2
6. Discuss the pharmacological intervention and adverse drug reaction in the geriatric patient.
   a. List at least six factors which contribute to adverse drug reactions in the elderly.
   b. List at least ten drugs which commonly cause toxicity in the geriatric patient.
   c. As related to digitalis intoxication, discuss the following:
      (1) Symptoms
      (2) Drug interactions
      (3) Management
   d. As related to diuretic use, discuss the following:
      (1) Symptoms of adverse reaction
      (2) Drug interaction
      (3) Management
   e. As related to antihypertensive drug use, discuss the following:
      (1) Symptoms of adverse reaction
      (2) Drug interaction
      (3) Management
   f. As related to antiarrhythmic drug use, discuss the following:
      (1) Symptoms of adverse reaction
      (2) Drug interaction
      (3) Management

g. As related to psychotropic drug use, discuss the following:
   (1) Symptoms of adverse reaction
   (2) Drug interaction
   (3) Management
h. As related to antidepressant use, discuss the following:
   (1) Symptoms of adverse reaction
   (2) Drug interaction
   (3) Management
i. As related to salicylate use, discuss the following:
   (1) Symptoms of adverse reaction
   (2) Drug interaction
   (3) Management

Related Academic Topics (See Appendix A): C1, S8
Workplace Skills (See Appendix B): WP2

7. Describe various aspects of elder abuse in the prehospital management of the geriatric patient.
   a. Discuss geriatric abuse and factors which precipitate abuse.
   b. Discuss signs and symptoms as related to geriatric abuse.
   c. Discuss the profile of a potential geriatric abuser.
   d. Discuss at least two considerations as related to obtaining a history from the abused geriatric.
   e. Discuss general gerontology program services, including objectives of the program.
   f. Discuss the following components of a gerontology program:
      (1) In-home assessment
      (2) Family conference

Related Academic Topics (See Appendix A): C1, C4
Workplace Skills (See Appendix B): WP2, WP3

Course Name: Behavioral Emergencies

Course Abbreviation: EMT 1641

Classification: Vocational-Technical Core

Description: This course will provide instruction on psychological/behavioral emergencies. (1 sch: 1 hr. lecture)

Pre/Corequisites: Internship for Clinical and Field Experience II (EMT 1724)

Competencies and Suggested Objectives:

1. Categorize various overt behaviors associated with emotional, behavioral, or psychological emergencies, discussing causative and exacerbating factors.
   a. Define the term "behavioral emergency."
   b. List factors that may alter the emotional status of the ill or injured.
   c. List those factors specific to the pediatric patient experiencing emotional crisis.
   d. List those factors specific to the elderly patient experiencing crisis.
   e. Define the following terms:
      (1) Anxiety
      (2) Confusion
      (3) Anger
      (4) Emotional crisis
      (5) Conversion reaction
      (6) Fear
      (7) Depression
   f. Describe those overt behavioral modifications associated with the following:
      (1) Rage
      (2) Hostility
      (3) Suicide
      (4) Violence
      (5) Depression
      (6) Hyperactivity
      (7) Paranoia

      Related Academic Topics (See Appendix A): C4
      Workplace Skills (See Appendix B): WP2
2. Explain the techniques of management for behavioral emergencies, including safety considerations for self, patient, and others.
   a. List the techniques of management of all children who are emotional.
   b. List the proper verbal communication techniques useful in managing the emotionally disturbed patient.

c. List the reasons for taking appropriate means to insure the safety of the paramedic.
d. Describe the reason for reassuring the patient experiencing an emotional crisis.
e. Describe the circumstances when bystanders and relatives should be removed from the scene.
f. List those factors that increase the risk of suicides.
g. Describe those behaviors that are indirect indicators of an impending suicide attempt.
h. Define the following terms:
   (1) Facilitation
   (2) Confrontation
   (3) Open-ended questions
   (4) Affect
   (5) Posture
   (6) Mental status
i. Describe the techniques that facilitate the systematic gathering of information from the disturbed patient.
j. Describe the techniques that are useful in managing the effects of crisis situations on the EMT-P.
k. Define the term "debriefing" as a technique for controlling EMT-P stress following a stress situation.
l. Describe the techniques that may be useful in redirecting anxiety in relatives and bystanders.
m. Describe the appropriate action of the EMT-P when confronted by the uncontrollable armed patient.
n. Describe the appropriate techniques used in restraining the patient.
o. Describe those techniques useful in protecting the EMT-P when attacked by a violent patient.
p. List those situations in which the EMT-P is expected to restrain or transport a patient forcibly and against his/her will.
q. List the appropriate communications of significant findings to the resource hospital.

Related Academic Topics (See Appendix A): C3, C4, C5
Workplace Skills (See Appendix B): WP2, WP3

Course Name: Internship for Clinical and Field Experience III

Course Abbreviation: EMT 1734

Classification: Vocational-Technical Core

Description: This course will provide clinical training in the skills and knowledge obtained in the classroom. These will be supervised activities carried out in the clinical and field setting at approved sites. (4 sch: 12 hr. lab)

Pre/Corequisites: Internship for Clinical and Field Experience II (EMT 1724) and all corequisite third semester courses

Competencies and Suggested Objectives:

1. Perform EMT-Paramedic activities.
   a. Measure, interpret, and record vital signs.
   b. Perform patient assessment.
   c. Perform spinal immobilization.
   d. Utilize infection control techniques.
   e. Perform splinting.
   f. Perform MAST application.
   g. Perform airway placement.
   h. Perform suctioning.
   i. Perform esophageal airway.
   j. Implement intravenous therapy.
   k. Perform defibrillation.
   l. Perform patient handling/lifting.
   m. Perform hemorrhage control.
   n. Perform oxygen administration.
   o. Perform documentation.
   p. Transmit radio report.
   q. Perform CPR.
   r. Perform medication administration (all methods).
   s. Perform advanced airway/breathing techniques.
   t. Perform glucose monitoring.
   u. Perform transcutaneous pacing.
   v. Practice arrhythmia recognition.
   w. Perform intra osseous infusion.
   x. Follow childbirth procedures.

   Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3, WP6

RELATED VOCATIONAL-TECHNICAL COURSES

Course Name: Fundamentals of Microcomputer Applications

Course Abbreviation: CPT 1113

Classification: Related Vocational-Technical (From Business and Office and Related Technology Cluster)

Description: This course will introduce information processing concepts to include: work processing, spreadsheet, and database management software. **Service course; not to be taken by Business and Office and Related Technology students.** (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Discuss hardware components.
   a. Describe the input, output, and storage elements of the information processing cycle and explain each element.
   b. Describe and discuss the three main classifications of the computer to include micro, mid-range, and mainframes.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, M1, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
2. Explain classes of software.
   a. Describe functions of systems software.
   b. Identify widely used software applications.
   c. Discuss various high level languages.
   d. Discuss data organization.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, M1, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
3. Create and print mailable documents.
   a. Develop keyboarding skills.
   b. Prepare letters using full block style.
   c. Use word processing software to produce documents.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
4. Create and print spreadsheet.
   a. Use spreadsheet software to produce acceptable worksheets.
   b. Generate graphs from worksheets.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, M7, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
5. Create and print database files.
   a. Use database software to produce databases.
   b. Edit database records.

c. Print reports.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, M7, S8
Workplace Skills (See Appendix B): WP2, WP4, WP6

6. Integrate application information.
   a. Merge a database with a word processing letter.
   b. Merge a spreadsheet with a letter.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, M7, S8
Workplace Skills (See Appendix B): WP2, WP4, WP6

RELATED ACADEMIC COURSES

Course Name: Anatomy and Physiology I

Course Abbreviation: BIO 1513

Classification: Related Academic

Description: A lecture/laboratory course dealing with the anatomical and physiological study of the human body, particularly the molecular, cellular, tissue, organs, and systems. Each system is considered in detail regarding both structure and function.

July 30, 1996

Course Name: Anatomy and Physiology II

Course Abbreviation: BIO 1523

Classification: Related Academic

Description: A lecture/laboratory course of the systems listed, but not covered in BIO 1513.

July 30, 1996

Course Name: General Psychology I

Course Abbreviation: PSY 1513

Classification: Related Academic

Description: An introduction to the scientific study of human behavior. Includes history and methods of psychology; growth and development; principles of learning; sensation and perception; thinking; statistics; personality; and intelligence.

July 30, 1996

Course Name: General Chemistry I

Course Abbreviation: CHE 1213

Classification: Related Academic

Description: Atomic and molecular structure, periodicity and atomic properties, stoichiometry, the male concept, types of solutions, energy-enthalpy.

Pre/Corequisites: General Chemistry Laboratory (CHE 1211) must be scheduled concurrently.

Course Name: General Chemistry Laboratory I

Course Abbreviation: CHE 1211

Classification: Related Academic

Description: Must be taken concurrently in phase with the lecture sequence. Selected experiments to illustrate the principles taught in lecture.

Pre/Corequisites: General Chemistry I (CHE 1213) must be scheduled concurrently.

July 30, 1996

Course Name: General Biology I

Course Abbreviation: BIO 1134

Classification: Related Academic

Description: A lecture/laboratory course in basic biological principles including chemical and cellular basis of life, anatomy and physiology, reproduction, genetics, organismal complexity, classification, biosocial problems and ecology.

July 30, 1996

Course Name: General Biology II

Course Abbreviation: BIO 1144

Classification: Related Academic

Description: A lecture/laboratory course of the basis principles listed but not covered in BIO 1134.

July 30, 1996

Course Name: Microbiology

Course Abbreviation: BIO 2924

Classification: Related Academic

Description: A lecture/laboratory course providing a survey of the microbes (microscopic organisms) with emphasis and detailed study being placed on those affecting other forms of life, especially man. Laboratory is devoted to basic techniques of microbial study, such as identification, control, morphology, physiology, life cycles, and culture techniques.

SECTION III:

RECOMMENDED TOOLS AND EQUIPMENT

RECOMMENDED TOOLS AND EQUIPMENT FOR POSTSECONDARY EMERGENCY MEDICAL TECHNOLOGY CLUSTER

CAPITALIZED ITEMS

1. Anatomical Manikin w/removable organs (1 per program)
2. ACLS Training Manikin w/remote and recorder (1 per program)
3. Chair, Stair (1 per program)
4. Cot, Ambulance (1 per program)
5. Defibrillator, Automated External, Educational (1 per program)
6. ECG Monitor, Defibrillator, Portable w/pacing, Educational (1 per program)
7. Generator, Arrhythmia (1 per program)
8. Heart Model, External/Internal (1 per program)
9. Intubation Manikin, Adult (1 per program)
10. Manikin, Full Body, CPR (1 per program)
11. Manikin, Obstetrical (1 per program)
12. Manikin, Trauma/Burn, Full Body (1 per program)
13. Pulse Oximeter [CO_2 detector] (2 per program)
14. Radio Transmitter/Receiver, Base Station (1 per program)
15. Radio Transmitter/Receiver, 2-way Portable (2 per program)
16. Skeleton, Human (replica) (1 per program)
17. Ventilator, Automatic Transport (1 per program)
18. Pneumatic Anti-Shock Garment (1 per program)
19. Computer w/monitor (1 per 4 students)
20. Printer, Laser (1 per 2 computers)

NON-CAPITALIZED ITEMS

1. Arm Sling (1 per 2 students)
2. Bag-Valve-Mask Device (1 per 2 students)
3. Blanket (1 per stretcher/cot)
4. Blood Glucose Monitor (1 per program)
5. Blood Pressure Cuff (4 per program)
6. Cervical Collar (4 per program)
7. Containers, assorted medication
8. Cravats (1 per 2 students)
9. Cricothyrotomy Device (1 per program)
10. Demand Valve
11. ECG Monitoring Cables (2)
12. ECG Electrodes (1 per program)
13. Esophogeal Gastric Tube Airway (2)
14. Esophageal Obturator Airway (2)
15. Head Immobilizer (CID) (1 per program)
16. Immobilization/Extrication Device (1 per program)

17. Intraosseus Infusion Simulator (1 per program)
18. IV Training Arm & Hand, Adult (2 per program)
19. IV Training Arm, Pediatric (2 per program)
20. Laryngoscope Intubation Kit (1 per program)
21. Spine Back Board (2)
22. Manikin, Child, CPR (1 per program)
23. Manikin, Infant, CPR (1 per program)
24. Manikin, Intubation, Infant (1 per program)
25. Manikin, Pneumothorax Emergency Training (1 per program)
26. Moulage Kit (1 per program)
27. Nasal Cannula (5)
28. Nasopharyngeal Airway (2)
29. Non-rebreather Masks (5)
30. Oropharyngeal Airway, various sizes
31. Oxygen Cylinder (2)
32. Oxygen Regulator and Flowmeter (1 per program)
33. Pen Light (1 per 2 students)
34. Pillows (6 per program)
35. Pocket Mask w/1-way valve and O_2 port (2 per program)
36. Scissors, Trauma (4 per program)
37. Sheets, Ambulance Cot (2 per program)
38. Short Spine Board (2 per program)
39. Simulator, Cricothyrotomy (1 per program)
40. Simulator, Intramuscular Injection (1 per program)
41. Splint, Air, various sizes
42. Splint, Ladder (1 per program)
43. Splint, Traction (2) Sager-Hare
44. Stethoscope (1 per 2 students)
45. Stethoscope, Dual Head (1 per program)
46. Straps, various sizes
47. Stretcher, Scoop (1 per program)
48. Suction Device, Portable (1 per program)
49. Syringes, various cc volumes
50. Venturi Mask (1 per program)

INSTRUCTIONAL AIDS

1. Projector, Slide (1 per program)
2. Screen, Projection (1 per program)
3. Projector, Overhead (1 per program)
4. VCR (1 per program)
5. Computer Table (1 per computer)

SUGGESTED REFERENCES: (1 of each per program)

Advanced Cardiac Life Support.
Bevelacqua. Prehospital Documentation: A Systematic Approach.
Bledsoe. Atlas of Paramedic Skills.
Bledsoe. Paramedic Emergency Care. Brady.
Bledsoe, et.al. Prehospital Emergency Pharmacology. Brady.
Bosker & Sequiera. The 60-Second EMT.
Braumwerth & Howe. Street Scenarios for the EMT and Paramedic.
Breaks. Exploring Medical Language.
Campbell. Basic Trauma Life Support for Paramedics and Advanced EMS. Brady.
Canan, Miller, Taigman. Taigman's Advanced Cardiology (In Plain English).
Case Studies in Prehospital Care.
Dick. Street Talk Notes from a Rescuer.
Eichelberger. Pediatric Emergencies. Brady.
Eichelberger. Pediatric Trauma.
Emergency Dictionary.
Fitch, Keller, Rayner, & Zalor. EMS Management: Beyond the Street.
Gensaulin & Raynovich. Prehospital Drug Therapy.
Grauer, K. A Practical Guide to ECG Interpretation.
Krebs, Henry, & Gabriele. When Violence Erupts: A Survival Guide for Emergency Responders.
LaSage, Derr, & Tarcliff. EMS Field Guide.
Madigan & Steward. Prehospital Emergency Drugs Pocket Reference.
Magiern. Effective Teamwork.
Mosby's Medical, Nursing, and Allied Health Dictionary.
Neely. Street Dancer.
Pediatric Advanced Life Support.
Prehospital Pediatric Life Support.
Prehospital Trauma Life Support.
Prehospital and Disaster Medicine.
Sheehy. Trauma Ready Reference.
Thibodeau & Patten. The Human Body in Health and Disease.
Wiederhold. Dosages and Calculation. Brady.

VIDEOS: (1 of each per program)

"Hands On" Instructor's Guide
Hands On, Automated Defibrillation
Hands On, Spinal Immobilization
Hands On, Vital Signs
Hands On, Bandaging and Splinting
Hands On, Airway Adjuncts
Hands On, Communicable Disease

Hands On, Emergency Vehicle Operations
Hands On, Child Birth
Hands On, Bleeding and Shock
Hands On, Patient Assessment
Approach to Pediatric Patients
Pass EMT
Pass Paramedic
Pass CPR
Pass ACLS
ACLS Video Series
OSHA Bloodborne Pathogens
Video Training Package
Pediatric Advanced Life Support
EMT-Paramedic Refresher
EMT-Basic Refresher
Intraosseus Infusion

AUDIOTAPES: (1 of each per program)

Introduction to Lung Sounds
Lung Sounds
Heart Tones

SLIDE SETS: (1 of each per program)

Trauma Slides (420) Series, Volume I
Trauma Slides (420) Series, Volume II

SOFTWARE:

Test Generator (Manager) (3 per program)

APPENDIX A:

RELATED ACADEMIC TOPICS

APPENDIX A

RELATED ACADEMIC TOPICS FOR COMMUNICATIONS

C1 Interpret written material.
C2 Interpret visual materials (maps, charts, graphs, tables, etc.).
C3 Listen, comprehend, and take appropriate actions.
C4 Access, organize, and evaluate information.
C5 Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.
C6 Communicate ideas and information effectively using various oral and written forms for a variety of audiences and purposes.

EXPANDED TOPICS FOR COMMUNICATIONS

TOPIC C1: Interpret written material.

C1.01 Read and follow complex written directions.
C1.02 Recognize common words and meanings associated with a variety of occupations.
C1.03 Adjust reading strategy to purpose and type of reading.
C1.04 Use sections of books and reference sources to obtain information.
C1.05 Compare information from multiple sources and check validity.
C1.06 Interpret items and abbreviations used in multiple forms.
C1.07 Interpret short notes, memos, and letters.
C1.08 Comprehend technical words and concepts.
C1.09 Use various reading techniques depending on purpose for reading.
C1.10 Find, read, understand, and use information from printed matter or electronic sources.

TOPIC C2: Interpret visual materials (maps, charts, graphs, tables, etc.).

C2.01 Use visuals in written and in oral presentations.
C2.02 Recognize visual cues to meaning (layout, typography, etc.).
C2.03 Interpret and apply information using visual materials.

TOPIC C3: Listen, comprehend, and take appropriate action.

C3.01 Identify and evaluate orally-presented messages according to purpose.
C3.02 Recognize barriers to effective listening.
C3.03 Recognize how voice inflection changes meaning.
C3.04 Identify speaker signals requiring a response and respond accordingly.
C3.05 Listen attentively and take accurate notes.
C3.06 Use telephone to receive information.

C3.07 Analyze and distinguish information from formal and informal oral presentations.

TOPIC C4: Access, organize, and evaluate information.

C4.01 Distinguish fact from opinion.
C4.02 Use various print and non-print sources for specialized information.
C4.03 Interpret and distinguish between literal and figurative meaning.
C4.04 Interpret written or oral communication in relation to context and writer's point of view.
C4.05 Use relevant sources to gather information for written or oral communication.

TOPIC C5: Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.

C5.01 Select appropriate words for communication needs.
C5.02 Use reading, writing, listening, and speaking skills to solve problems.
C5.03 Compose inquiries and requests.
C5.04 Write persuasive letters and memos.
C5.05 Edit written reports, letters, memos, and short notes for clarity, correct grammar, and effective sentences.
C5.06 Write logical and understandable statements, phrases, or sentences for filling out forms, for correspondence or reports.
C5.07 Write directions or summaries of processes, mechanisms, events, or concepts.
C5.08 Select and use appropriate formats for presenting reports.
C5.09 Convey information to audiences in writing.
C5.10 Compose technical reports and correspondence that meet accepted standards for written communications.

TOPIC C6: Communicate ideas and information using oral and written forms for a variety of audiences and purposes.

C6.01 Give complex oral instructions.
C6.02 Describe a business or industrial process/mechanism.
C6.03 Participate effectively in group discussions and decision making.
C6.04 Produce effective oral messages utilizing different media.
C6.05 Explore ideas orally with partners.
C6.06 Participate in conversations by volunteering information when appropriate and asking relevant questions when appropriate.
C6.07 Restate or paraphrase a conversation to confirm one's own understanding.
C6.08 Gather and provide information utilizing different media.

C6.09 Prepare and deliver persuasive, descriptive, and demonstrative oral presentations.

RELATED ACADEMIC TOPICS FOR MATHEMATICS

M1 Relate number relationships, number systems, and number theory.
M2 Explore patterns and functions.
M3 Explore algebraic concepts and processes.
M4 Explore the concepts of measurement.
M5 Explore the geometry of one-, two-, and three-dimensions.
M6 Explore concepts of statistics and probability in real world situations.
M7 Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

EXPANDED TOPICS FOR MATHEMATICS

TOPIC M1: Relate number relationships, number systems, and number theory.

M1.01 Understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and scientific notation) in real world and mathematical problem situations.
M1.02 Develop number sense for whole numbers, fractions, decimals, integers, and rational numbers.
M1.03 Understand and apply ratios, proportions, and percents in a wide variety of situations.
M1.04 Investigate relationships among fractions, decimals, and percents.
M1.05 Compute with whole numbers, fractions, decimals, integers, and rational numbers.
M1.06 Develop, analyze, and explain procedures for computation and techniques for estimations.
M1.07 Select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods.
M1.08 Use computation, estimation, and proportions to solve problems.
M1.09 Use estimation to check the reasonableness of results.

TOPIC M2: Explore patterns and functions.

M2.01 Describe, extend, analyze, and create a wide variety of patterns.
M2.02 Describe and represent relationships with tables, graphs, and rules.
M2.03 Analyze functional relationships to explain how a change in one quantity results in a change in another.
M2.04 Use patterns and functions to represent and solve problems.
M2.05 Explore problems and describe results using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.

M2.06 Use a mathematical idea to further their understanding of other mathematical ideas.
M2.07 Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as art, music, and business.

TOPIC M3: Explore algebraic concepts and processes.

M3.01 Represent situations and explore the interrelationships of number patterns with tables, graphs, verbal rules, and equations.
M3.02 Analyze tables and graphs to identify properties and relationships and to interpret expressions and equations.
M3.03 Apply algebraic methods to solve a variety of real world and mathematical problems.

TOPIC M4: Explore the concepts of measurement.

M4.01 Estimate, make, and use measurements to describe and compare phenomena.
M4.02 Select appropriate units and tools to measure to the degree of accuracy required in a particular situation.
M4.03 Extend understanding of the concepts of perimeter, area, volume, angle measure, capacity, and weight and mass.
M4.04 Understand and apply reasoning processes, with special attention to spatial reasoning and reasoning with proportions and graphs.

TOPIC M5: Explore the geometry of one-, two-, and three-dimensions.

M5.01 Identify, describe, compare, and classify geometric figures.
M5.02 Visualize and represent geometric figures with special attention to developing spatial sense.
M5.03 Explore transformations of geometric figures.
M5.04 Understand and apply geometric properties and relationships.
M5.05 Classify figures in terms of congruence and similarity and apply these relationships.

TOPIC M6: Explore the concepts of statistics and probability in real world situations.

M6.01 Systematically collect, organize, and describe data.
M6.02 Construct, read, and interpret tables, charts, and graphs.
M6.03 Develop an appreciation for statistical methods as powerful means for decision making.
M6.04 Make predictions that are based on exponential or theoretical probabilities.

M6.05 Develop an appreciation for the pervasive use of probability in the real world.

TOPIC M7: Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

M7.01 Use computers and/or calculators to process information for all mathematical situations.
M7.02 Use problem-solving approaches to investigate and understand mathematical content.
M7.03 Formulate problems from situations within and outside mathematics.
M7.04 Generalize solutions and strategies to new problem situations.

RELATED ACADEMIC TOPICS FOR SCIENCE

S1 Explain the Anatomy and Physiology of the human body.
S2 Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.
S3 Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.
S4 Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.
S5 Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.
S6 Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.
S7 Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance, population genetics, the structure and function of DNA, and current applications of DNA technology.
S8 Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

EXPANDED TOPICS FOR SCIENCE

TOPIC S1: Explain the Anatomy and Physiology of the human body.

S1.01 Recognize common terminology and meanings.
S1.02 Explore the relationship of the cell to more complex systems within the body.

S1.03 Summarize the functional anatomy of all the major body systems.
S1.04 Relate the physiology of the major body systems to its corresponding anatomy.
S1.05 Compare and contrast disease transmission and treatment within each organ system.
S1.06 Explore the usage of medical technology as related to human organs and organ systems.
S1.07 Explain the chemical composition of body tissue.

TOPIC S2: Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.

S2.01 Identify the major types and structures of plants, viruses, monera, algae protista, and fungi.
S2.02 Explain sexual and asexual reproduction.
S2.03 Describe the ecological importance of plants as related to the environment.
S2.04 Analyze the physical chemical and behavioral process of a plant.

TOPIC S3: Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.

S3.01 Explain the morphology, anatomy, and physiology of animals.
S3.02 Describe the characteristics, behaviors, and habitats of selected animals.

TOPIC S4: Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.

S4.01 Examine minerals and their identification, products of the rock cycle, byproducts of weathering, and the effects of erosion.
S4.02 Relate the Hydrologic Cycle to include groundwater its zones, movement, and composition; surface water systems, deposits, and runoff.
S4.03 Consider the effects of weather and climate on the environment.
S4.04 Examine the composition of seawater; wave, tides, and currents; organisms, environment, and production of food; energy, food and mineral resources of the oceans.

TOPIC S5: Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.

S5.01 Examine the science of chemistry to include the nature of matter, symbols, formulas and nomenclature, and chemical equations.

S5.02 Identify chemical reactions including precipitation, acids-bases, and reduction-oxidation.
S5.03 Explore the fundamentals of chemical bonding and principles of equilibrium.
S5.04 Relate the behavior of gases.
S5.05 Investigate the structure, reactions, and uses of organic compounds; and investigate nuclear chemistry and radiochemistry.

TOPIC S6: Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.

S6.01 Examine fundamentals of motion of physical bodies and physical dynamics.
S6.02 Explore the concepts and relationships among work, power, and energy.
S6.03 Explore principles, characteristics, and properties of electricity, magnetism, light energy, thermal energy, and wave energy.
S6.04 Identify principles of modern physics related to nuclear physics.

TOPIC S7: Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance; population genetics, the structure and function of DNA, and current applications of DNA technology.

S7.01 Examine principles, techniques, and patterns of traits and inheritance in organisms.
S7.02 Apply the concept of population genetics to both microbial and multicellular organism.
S7.03 Identify the structure and function of DNA and the uses of DNA technology in science, industry, and society.

TOPIC S8: Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

S8.01 Apply the components of scientific processes and methods in classroom and laboratory investigations.
S8.02 Observe and practice safe procedures in the classroom and laboratory.
S8.03 Demonstrate proper use and care for scientific equipment.
S8.04 Investigate science careers, and advances in technology.
S8.05 Communicate results of scientific investigations in oral, written, and graphic form.

APPENDIX B:

WORKPLACE SKILLS

APPENDIX B
WORKPLACE SKILLS FOR THE 21ST CENTURY

WP1 Allocates resources (time, money, materials and facilities, and human resources).

WP2 Acquires, evaluates, organizes and maintains, and interprets/communicates information, including the use of computers.

WP3 Practices interpersonal skills related to careers including team member participation, teaching other people, serving clients/customers, exercising leadership, negotiation, and working with culturally diverse.

WP4 Applies systems concept including basic understanding, monitoring and correction system performance, and designing and improving systems.

WP5 Selects, applies, and maintains/troubleshoots technology.

WP6 Employs thinking skills including creative thinking, decision making, problem solving, reasoning, and knowing how to learn.

APPENDIX C:

STUDENT COMPETENCY PROFILE

STUDENT COMPETENCY PROFILE
EMERGENCY MEDICAL TECHNOLOGY - BASIC

Student: _____

This record is intended to serve as a method of noting student achievement of the competencies in each course. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the program.

In the blank before each competency, place the date on which the student mastered the competency.

EMT Basic (EMT 1114)

_____ 1. Acquire a professional knowledge and skills of EMS systems to include the roles and responsibilities of an EMT-Basic.
_____ 2. Recognize factors associated with stress and personal safety.
_____ 3. Explain medical/legal and ethical implications that impact the functioning of a basic EMT.
_____ 4. Discuss anatomy and physiology using medical terminology.
_____ 5. Demonstrate and explain the importance of obtaining the different aspects of vital signs in patient assessment.
_____ 6. Discuss and demonstrate the appropriate methods and equipment utilized for lifting and moving patients allowing for safety of the patient and self.
_____ 7. Discuss the respiratory system and appropriate airway and ventilatory management.
_____ 8. Explain the rationale for crew members to evaluate scene safety prior to entering the scene.
_____ 9. Explain the importance of learning a general impression of the patient.
_____ 10. Demonstrate and explain the different aspects of a rapid trauma assessment in order to provide patient care.
_____ 11. Identify and demonstrate the different aspects of patient assessment with varying degrees of patient's responsiveness.
_____ 12. Determine the components of the detailed physical exam and the care to be provided to the patient during assessment.
_____ 13. Explain the components and importance of the ongoing assessment.
_____ 14. Demonstrate the proper procedure and skills for effective radio communications.
_____ 15. Develop appropriate documentation which adheres to state and local requirements.
_____ 16. Discuss pharmacology relative to the EMT-Basic.

_____ 17. Describe the respiratory system and procedures for airway/ventilation management.

_____ 18. Demonstrate cardiac interventions and discuss the management of the cardiac patient.

_____ 19. Explain and perform prehospital Basic interventions for a patient with a diabetic emergency.

_____ 20. Recognize and manage allergic reactions.

_____ 21. Define poisons and discuss appropriate intervention methods for poisoning.

_____ 22. Identify environmental conditions that pose a hazard to the body and discuss appropriate management techniques.

_____ 23. Appraise behaviors relative to the potential for harm and explain appropriate intervention.

_____ 24. Recognize and manage an obstetrical emergency to include care for the neonate.

_____ 25. Describe the pathophysiology of hypoperfusion and demonstrate emergency interventions.

_____ 26. Explain soft tissue injuries and perform the techniques used in the management of various soft tissue injuries.

_____ 27. Integrate the anatomy and physiology of the musculoskeletal system with the mechanisms of immobilization of the painful, swollen, deformed extremity.

_____ 28. Distinguish the anatomy and physiology of the nervous system, explain the pathophysiology of traumatic injuries, and demonstrate the prehospital skills necessary for the neurological injured patient.

_____ 29. Contrast the care required for pediatric patients versus adult patients and perform the skills necessary for prehospital pediatric intervention.

_____ 30. Describe ambulance call procedures associated with vehicle and patient care.

_____ 31. Explain the purpose and process of extrication.

_____ 32. Recognize and identify hazardous materials and demonstrate knowledge of hazardous procedures.

STUDENT COMPETENCY PROFILE
EMERGENCY MEDICAL TECHNOLOGY - PARAMEDIC

Student: _____

This record is intended to serve as a method of noting student achievement of the competencies in each course. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the program.

In the blank before each competency, place the date on which the student mastered the competency.

Prehospital Environment (EMT 1123)

_____ 1. Discuss the effects of stress and techniques for its management.
_____ 2. Distinguish between the EMT (Basic, Intermediate, and Paramedic) roles and responsibilities as healthcare professionals.
_____ 3. Recognize and analyze aspects of the EMS systems in relation to the prehospital setting.
_____ 4. Identify and interpret statutes, laws, and guidelines associated with the prehospital environment.
_____ 5. Discuss the components of EMS communications including verbal and technical.
_____ 6. Describe the phases of rescue attempts and discuss the components of each phase.
_____ 7. Identify and categorize the paramedic's response to a major incident.

Body Systems (EMT 1133)

_____ 1. Recognize and discuss word components, terms, procedures, and abbreviations related to the various body systems.
_____ 2. Explain structures and function of body systems including cells, tissues, organs, and systems as they relate to physiologic integrity.

Patient Assessment and Airway Management (EMT 1213)

_____ 1. Implement an assessment technique allowing for early identification and intervention in selected life threatening illness/injury and non-emergent conditions.
_____ 2. Discuss the pathophysiology of specific selected respiratory conditions and the management of those conditions.

Defibrillation Skills (EMT 1222)

_____ 1. Discuss the anatomy and physiology of the heart.
_____ 2. Analyze and interpret an electrocardiogram to identify selected arrhythmias.
_____ 3. Recognize signs and symptoms of cardiac abnormalities and explain appropriate management.
_____ 4. Utilize a cardiac monitor/defibrillator to acquire an ECG tracing and/or correct ventricular arrhythmias.

Shock, Trauma, And Burn Management (EMT 1315)

_____ 1. Explain the pathophysiology of hypoperfusion.
_____ 2. Discuss the management techniques used in treatment of shocks and demonstrate proper use of shock resuscitation skills.
_____ 3. Describe a general approach to trauma care.
_____ 4. Discuss trauma related to the respiratory system to include assessment and management techniques.
_____ 5. Discuss trauma related to the circulatory system to include assessment and management techniques.
_____ 6. Discuss trauma related to the abdomen and pelvis to include assessment and management techniques.
_____ 7. Discuss trauma related to the extremities to include assessment and management techniques.
_____ 8. Discuss trauma related to the head and neck to include assessment and management techniques.
_____ 9. Describe monitoring of the trauma patient to include evaluation of degree of severity and communications with the hospital.
_____ 10. Explain the pathophysiology of burn shock in reference to normal anatomy.
_____ 11. Discuss and assess the severity of burn injury.
_____ 12. Explain and demonstrate shock resuscitation principles of the burn injury patient.

Internship for Clinical and Field Experience I (EMT 1713)

_____ 1. Perform intermediate level EMT activities.

Respiratory Emergencies (EMT 1412)

_____ 1. Explain respiratory emergencies and treatments associated with selected respiratory emergencies.

Cardiovascular Emergencies (EMT 1425)

_____ 1. Explain selected physiology in reference to cardiac functioning.
_____ 2. Discuss assessment and history taking relative to cardiovascular complaints.
_____ 3. Describe the pathophysiology, signs and symptoms, assessment and management of certain cardiovascular conditions.
_____ 4. Discuss pharmacology pertinent to the management of cardiovascular illness.
_____ 5. Demonstrate appropriate interpretation and management techniques to deal with a variety of potentially life-threatening cardiovascular emergencies.

Medical Emergencies (EMT 1436)

_____ 1. Integrate the pathophysiology of hyper/hypoglycemia with subsequent signs and symptoms and compensatory mechanism.
_____ 2. Discuss the management of the hyper/hypoglycemia patient and demonstrate the skills used in the management of this type of patient.
_____ 3. Discuss the pathophysiology of the neurologically injured/ill patient with regard toward signs/symptoms and assessment tools.
_____ 4. Describe the various nervous system ailments that might present a prehospital emergency and demonstrate the management techniques.
_____ 5. Discuss anatomy and physiology of the abdomen.
_____ 6. Explain the pathophysiology of abdominal pain, discuss related signs and symptoms, and perform an abdominal assessment and management.
_____ 7. Discuss anatomy and physiology of genitourinary system and the pathophysiology of common geniturourinary disorders that might present as an emergency.
_____ 8. Describe the assessment and management techniques used in genitourinary disorders.
_____ 9. Explain the complications, assessment, management, and types of dialysis.
_____ 10. Summarize the pathophysiology, signs and symptoms, effects, assessment, and management of anaphylaxis.
_____ 11. Explain the pathophysiology, signs and symptoms, assessment, and management of selected toxins/poisons.
_____ 12. Differentiate the signs and symptoms of selected types of drug intoxication and include appropriate assessment and management for each.
_____ 13. Demonstrate knowledge of the body's immune and lymphatic systems to include the significance of selected cell types and fluids.

_____ 14. Differentiate the signs and symptoms of selected communicable/infectious diseases to include appropriate assessment and management for each.
_____ 15. Formulate an algorithm for the identification and management of parasites.
_____ 16. Discuss and demonstrate protective procedures for manipulation and decontamination of infectious agents.
_____ 17. Differentiate the thermoregulatory mechanisms and compensatory mechanisms.
_____ 18. Explain the heat related disorders, preventive measures, and the appropriate management of each.
_____ 19. Explain the hypothermic disorders, preventive measures, and the appropriate management of each.
_____ 20. Integrate the current statistics available concerning near-drowning episodes and current management algorithm.
_____ 21. Generate a management approach to the victim of radiation exposure to include medic protection.
_____ 22. Distinguish between normal breathing and breathing gas under pressure and include diving disorders, signs, symptoms, and management.

General Pharmacology (EMT 1512)

_____ 1. Explain the principles of pharmacology including the terminology, drug dosages, actions, and interactions.
_____ 2. Calculate drug dosages.
_____ 3. Apply principles and practice of medication administration.
_____ 4. Explain the use of certain medications used in prehospital care.

Internship for Clinical and Field Experience II (EMT 1724)

_____ 1. Perform EMT Intermediate and EMT-Paramedic activities.

Obstetrical, Gynecological, and Neonatal Emergencies (EMT 1612)

_____ 1. Differentiate the various aspects of prehospital assessment and management of the gynecological patient.
_____ 2. Describe the normal reproductive cycle.
_____ 3. Identify and demonstrate an appropriate assessment of the obstetric patient.
_____ 4. Describe the pathophysiology, assessment, and management of obstetrical complications.
_____ 5. Identify physical and psychological changes and management of these changes which occur during labor, delivery, and postpartum.

_____ 6. Identify care and management of the neonate.

Pediatrics (EMT 1621)

_____ 1. Distinguish various aspects of normal growth and development including vital signs and the general approach to care.
_____ 2. Describe the pathophysiology, assessment, and management of selected common pediatric problems.
_____ 3. Demonstrate the performance of advanced life support procedures for the pediatric patient to include pharmacological interventions.

Geriatrics (EMT 1631)

_____ 1. Generalize the knowledge of the specialized problems and considerations in managing the geriatric patient.
_____ 2. Discuss the disease processes as they relate to the geriatric patient in body systems including nervous, cardiovascular, respiratory, digestive, and genitourinary.
_____ 3. Discuss the pathophysiology and management of carcinoma in the geriatric patient.
_____ 4. Describe the various effects of environmental emergencies and management as related to the geriatric patient.
_____ 5. Discuss trauma management and considerations dealing with the geriatric patient.
_____ 6. Discuss the pharmacological intervention and adverse drug reaction in the geriatric patient.
_____ 7. Describe various aspects of elder abuse in the prehospital management of the geriatric patient.

Behavioral Emergencies (EMT 1641)

_____ 1. Categorize various overt behaviors associated with emotional, behavioral, or psychological emergencies, discussing causative and exacerbating factors.
_____ 2. Explain the techniques of management for behavioral emergencies, including safety considerations for self, patient, and others.

Internship for Clinical and Field Experience III (EMT 1734)

_____ 1. Perform EMT-Paramedic activities.